Keck School of Medicine of USC

Innovations in Medical Education

Transforming Health Professions Education through Innovation

Friday and Saturday, February 14 and 15, 2020

Hilton San Gabriel
225 West Valley Boulevard
San Gabriel, California, CA 91776

Presented by: Department of Medical Education
and USC Office of Continuing Medical Education

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IME 2020 Conference Schedule

Friday-Saturday, February 14-15, 2020

sites.usc.edu/ime-conference

FRIDAY, FEBRUARY 14, 2020	
8:30 am - 9 am	**Registration and Continental Breakfast (Pre-Conference Session only)** – *Foyer*
9 am - 11 am	**PRE-CONFERENCE WORKSHOP (Fee: $50 includes CME)**  **Leadership to Support Wellbeing** **Samuel Yanofsky, MD; Rebecca Margolis, DO** *Children's Hospital Los Angeles and Keck School of Medicine of USC* This workshop will engage you in examining the core elements of good leadership. We will then take you on a journey to explore wellbeing in your own environment (threats and supporting factors). Become a local champion for wellbeing, leaving the workshop with a mini-change plan for a small local change that could enhance wellbeing for your target group. *San Francisco Conference Room*
10:30 am - 11:30 am	**Registration and Lunch –** *Foyer*
11:30 am - 11:45 am	**WELCOME** *Conference Chair: Julie Nyquist, PhD; Conference Co-Chair: Cha-Chi Fung, PhD*
11:45 am - 12:45 pm	**IME 2020 KEYNOTE ADDRESS** **Inspiring Leadership in Academic Medicine in the 21st Century** **Laura Mosqueda, MD** *Dean, Keck School of Medicine of USC; May S. and John H. Hooval Dean's Chair in Medicine; Professor of Family Medicine and Geriatrics* Our budgets are shrinking, but our expectations keep growing. More than ever, we need leaders in academia who are both inspired and inspiring. Leading in these difficult times takes knowledge, intelligence, efficiency, and compassion. But even those skills aren't enough to motivate and empower people to perform the vital work that needs doing. In this lecture, Dr. Mosqueda will talk about lessons she has learned regarding inspiration: how to be inspired, stay inspired, and inspire others.  *Ballroom B2-C*

12:45 pm - 1 pm	**Break**			
1 pm - 2:30 pm	*Ballroom B2-C* **Presentations of Innovations: Undergraduate Medical Education** *Moderator: Maurice Clifton, MD, MSEd* 1) **Mindfulness Exercises and Effects on Perceived Work-load: A Pilot Study.** *Shoaib, Abdullah; Agharokh, Ladan.* 2) **Developing a Pre-Clinical Spiraled Curriculum: Prelimi-nary Data from Three Medical School Classes.** *Maltagliati, Anthony; Paree, Joshua; Vanderah, Todd.* 3) **Examining Our Education Innovation Culture at Baseline.** *Zaidi, Nikki; Ross, Paula; Morgan, Helen; Yang, Jun; Koivupalo, Laurie; Mangrulkar, Rajesh.* 4) **Interactive Fiction: Using Technology to Bring Adaptive Patient Cases to the Classroom.** *Kim, Rory; Morningstar-Kywi, Noam.* 5) **Medical Students Value an Approach to Wellness that Honors Individual Differences and Preferences.** *Edmonds, Victoria; Chatterjee, Krishanu; Stonnington, Cynthia; Vickers, Kristin.*	*Santa Barbara Conference Room* **MedEd Certificate Workshop: Developing an Inspirational Leadership Curriculum for Residents** *Julie Nyquist, PhD; Natalie Hohensee, DDS, MACM; Britney Corey, MD* Join us for an interactive session on developing leadership training within graduate medical education (GME), with a focus on content and process. Take home a tool to guide your planning activities. Led by educators from a variety of backgrounds with experience teaching students, residents, and faculty.	*San Francisco Conference Room* **Conference Workshop: The Problem with the "Problem Learner": Using a Systematic Approach To Help Learners Learn** *Lavjay Butani, MD, MACM; Manu Madhok, MD, MPH* Participants will view the approach to the "problem learner" through the lens of situated learning theory — systematically exploring each facet of the learning environment that can possibly contribute to struggles that learners experience. Using an interactive format, participants will work to develop an approach to identifying, characterizing and helping learners with problems. Participants will leave with a road map to use in their own teaching and educational program.	*San Diego Conference Room* **Conference Workshop: Roses and Thorns: Solution-Focused Feedback in Medical Education** *Nikette Neal, MD; Lauren Fine, MD* Participants will use this workshop to learn how to change their approach to problems in their workplace, career, and even their life outside of work. The workshop is loosely based on Solution-Focused Brief Therapy (SFBT) in which a problem is addressed through focusing on the solution, rather than by focusing on the problem itself. Participants will use reflection on past negative and positive experiences to create a tool they and their colleagues can use to create positive change.
2:30 pm - 2:45 pm	**Break**			
2:45 pm - 4:15 pm	*Ballroom B2-C* **Presentations of Innovations: Graduate Medical Education** *Moderator: Dante Cerza, MD, MACM* 1) **Feasibility and Usefulness of a Novel Curriculum in Pediatric Developmental Screening.** *Dosman, Cara F.; Eliason, Sabrina; Andrews, Debbi; Gallagher, Sheila; Davila-Cervante, Andrea; Guo, Qi; Hodgson, Carol S.* 2) **Mandatory Palliative Care Rotation for Anesthesia Residents at a Tertiary Academic Medical Center.**	*Santa Barbara Conference Room* **MedEd Certificate Workshop: Professional Identity Formation: A Teaching and Mentoring Model Using Reflective Practice** *Donna Elliott, MD, EdD; Pamela Schaff, MD; Erika Wright, PhD* Professional identity formation (PIF) has been defined as "the transformative journey through which one integrates the knowledge, skills, values,	*San Francisco Conference Room* **Conference Workshop: Enlightened Leadership and High Functioning Teams: You Can Do This!** *Jeffrey Ring, PhD* This workshop will review the characteristics of optimal team functioning and enlightened leadership. and will emphasize the precious role that leaders play in terms of enhanced clinical outcomes, patient experience of care, and team/ practitioner wellness and	*San Diego Conference Room* **SPECIAL POSTER SESSION** **PBLI in Action: Quality Improvement Ideas and Results** *Moderators: Ramin Tabatabai, MD; Allyson McDermott, MD* This special poster session will feature no more than 15 posters selected to match the theme. Each presenter will have the opportunity to provide a 2- minute descript-tion of their project. There will then be 60 minutes for participants to examine each

	Hagiwara, Yuya; Rowland, Ian; Streitz, Susanne; Thomsen, Timothy. 3) **There's an app for that! Pilot Implementation of PediCrisis 2.0 for Pediatric Anesthesia Fellows.** *Boucharel, Adria; Schreiber, Jacob; Nyquist, Julie.* 4) **Pediatric Resident Curriculum on Addressing Parental Vaccine Hesitancy.** *Chen, Hsuan-hsiu Annie; Ben-Isaac, Eyal; Hernandez, Adriana; Pannaraj, Pia; Thompson, Michelle.*	and behaviors of a competent, humanistic physician with one's own unique identity and core values." Medical schools and residency programs will learn how to use various methods for providing a strong foundation upon which students and residents can build their professional identities.	vitality. Together, we will examine Lencioni's leadership model with a strong foundation of vulnerability-based trust, managing conflict and making commitments, followed by accountability and results.	poster and discuss the projects with the poster presenters.
4:15 pm - 4:30 pm	**Snack** *(Foyer)* **and Poster Set-Up**			
4:30 pm - 6 pm	**LARGE POSTER SESSION 1 AND FRIDAY AWARDS** This poster session and the one on Saturday at lunchtime organize posters by topics to facilitate attendees' journey throughout the room: cool ideas, exemplar curricula, works in progress, and completed studies. The topics are arranged alphabetically with the first half in the session on Friday and the second portion in the session during lunch on Saturday. *Ballroom A-B1*			

SATURDAY, FEBRUARY 15, 2020				
7:30 am - 8 am	**Registration and Continental Breakfast –** *Foyer*			
8 am - 9:30 am	*Ballroom C* **Presentations of Innovations: Teaching Methods** *Moderator: Kathleen Besinque, PharmD, MSEd* 1) **Effect of the Jigsaw Method in Enhancing Learning of Biostatistics in a Medical School Curriculum.** *Kawalec, Jill; Jenks, Viveka.* 2) **Development of a Faculty-Led Outpatient Morning Report Model to Enhance Resident Learning.** *Nazarkhan, Fathima; Benedict, Darcy.* 3) **Implementing a Flipped Class-room Approach for Pediatric Resident Education in the NICU.** *Langston, Seth; Relan, Anju; Walker, Valencia; Nguyen, Margaret; Enciso, Josephine; Lloyd, Jessica.* 4) **An Asynchronous Flexible Elective for Emergency Medicine-Bound Senior Medical Students.** *Fredericks,*	*Santa Barbara Conference Room* **MedEd Certificate Workshop: Staying Focused on the Goal: Developing Team-based Learning Sessions with Backwards Instructional Design** *Daniel Novak, PhD; Ronan Hallowell, EdD; Grant Christman, MD, MACM* As more medical schools integrate flipped classroom approaches to teaching, medical educators are presented with an opportunity to shorten their lectures and make more time for interactive, collaborative learning experiences. In this workshop, participants will learn how to use backwards design and Team-based Learning (TBL) techniques to create engaging, challenging	*San Francisco Conference Room* **Conference Workshop: Values-Based Practice in Medical Education: Practical Considerations** *Huda Tawfik, MD, PhD; Nahla Gomaa, MD, PhD* Evidence-based practice (EBP) and values-based practice (VBP) are complementary partner components of clinical decision making. Both EBP and VBP offer clinicians a way to achieve the objectives of improved quality, improved patient satisfaction, and reduced costs. In this workshop, we will enhance the awareness of VBP and give an overview of how to integrate VBP in medical education.	*San Diego Conference Room* **CURRICULAR EXEMPLARS** *Moderator: Win May, MD, PhD, FRCP* **The Practitioner's Guide to Global Health: An Interactive, Online, Open-Access Curriculum (multi-institutional)** *Gabrielle A. Jacquet, MD, MPH* **Moving Beyond Wellness Curriculum: Building a Culture of Community Wellness** *Wesley Fox, MD; Michelle K. Raabe* **The "R" Word: Using Reflection to Promote Well-Being, Community, and Purpose in Medical Students** *Jessica Zhu; Alexander Tran*

	Anthony; Stern, Alex; Riddell, Jeff; Diller, David; Shamoon, Michael; Jain, Aarti. 5) **Targeted Case Presentations: Interest Groups Improving Medical Student Confidence in Consultation.** *Gelovani, David; Jaffar, Samia; Jeakle, Will; Bacyinski, Andrew; Chagas, Christian; Morris, Alexandra.*	learning experiences with their students. Participants should bring an idea for a flipped lesson or module.		
9:30 am - 9:45 am	**Break**			
9:45 am - 11:15 am	*Ballroom C* **Presentations of Innovations: Potpourri** *Moderator: Michelle Thompson, MD, MACM* 1) **Healthcare Center Based Model to Address Food Insecurity.** *Chen-Joea, Cynthia; Gornes, Chris; Melgar, Karina; Luther, Jeffrey; Fletcher, Abigail.* 2) **Perceived Effectiveness of Professional Development for PhD Students.** *Hodgson, Carol; Bat-Erdene, Uilst; Ostergaard, Hanne; Persad, Sujata.* 3) **From Systematic Review to Evidence-Based Organizational Learning: Cyber-Seminars.** *Hempel, Susanne; Sellami, Nadia; Rubenstein, Lisa; Beil, Tracy; Lin, Jennifer.* 4) **Attention-Deficit/Hyperactivity Disorder, Are Residents Following AAP Guidelines?** *Bradham, Kari; Trimm, R Franklin; Darden, Alix.* 5) **Preference for Peers Over Faculty: Building Better Exam Review Sessions..** *Bhatter, Param, and Frisch, Emily (co-first authors); Grimaud, Logan; Tiourin, Ekaterina; Youm, Julie; Greenberg, Milton.*	*Santa Barbara Conference Room* **MedEd Certificate Workshop: Active and Engaged Learning** *Cathy Jalali, PhD; Win May, MD, PhD, FRCP* Active learning and learner engagement are widely referenced in medical education circles. Is lecturing obsolete? Are interactivity and group work required for engaged and active learning? This interactive workshop explores some of the commonly used methods to deliberately introduce active learning and enhance learner engagement using a variety of instructional approaches.	*San Francisco Conference Room* **Conference Workshop: Gamification in Internal Medicine: How to Play for Success** *Allie Dakroub, MD; Heather Bernard, MD; Diane Levine, MD* Our workshop focuses on the implementation of gamification techniques as a novel approach to graduate medical education. We will briefly review key points of gamification; however, we will focus mainly on designing games and implementing them. We will play 3 learning games (in teams, as tables). After the three brief games, we will spend the bulk of our workshop in small groups developing learning games within the contexts of each participant's home institution.	*San Diego Conference Room* **Conference Workshop: "What Should I Be When I Grow Up?" Mentoring Learners through Early Career Decisions** *Allyson McDermott, MD; Melanie Rudnick, MD; Grant Christman, MD, MACM* Feel lost about guiding your mentees as they explore the various options for the next steps in their careers? This ninety-minute, interactive faculty development workshop will introduce faculty mentors to methodologies that can be used to guide mentees in gaining a deeper knowledge of their personal and professional values, and provides tangible tools and resources for faculty to use with mentees as part of an individualized career needs assessment mentorship discussion.
11:15 am - 11:30 am	**Lunch** *(Foyer)* **and Poster Set-Up** *(Ballroom A-B)*			
11:30 am - 1:00 pm	**LARGE POSTER SESSION 2 AND SATURDAY AWARDS** This poster session and the one on Friday afternoon organize posters by topics to facilitate attendees' journey throughout the room: cool ideas, exemplar curricula, works in progress, and completed studies. The topics are arranged alphabetically with the first half in the session on Friday and the second portion in the session during lunch on Saturday. *Ballroom A-B*			
1:00 pm – 1:15 pm	**Break**			

1:15 pm - 2:45 pm	*Ballroom C* **Presentations of the Best of Cool Ideas: Potpourri** *Moderator: Josephine Enciso, MD, MACM* 1) **BOLDly Addressing Border Health Needs in Obstetrics & Gynecology Residency.** *Salcedo, Jennifer; Vela, Efraim.* 2) **Increasing Provider Advocacy Education and Engagement: The Advocacy Spotlight Series.** *Mihalek, Alexandra J.; Petko, Kimberly A.* 3) **Implementation and Evaluation of the Checkup Checklist App: Engaging Patients in Preventive Care.** *Amedi, Alind; Sinha, Kairav; Hendel, Chris; Hochman, Michael.* 4) **The Downstate of Mind Blog: An Avenue for Humanistic Reflection and Expression.** *Wohlleber, Margaret; Eisner, Shirley; Flanagan, Patrick; Lopez, Ana Maria; Shah, Tejen; Uwaga, Amarachi; Quinn, Antonia.* 5) **The Military Academic Enrichment Elective: Improving Veteran Healthcare One Student at a Time.** *Williams, Taylor; McBride-Hayes, Meaghan; Nagy, Michael; Lee, Kenneth.*	*Santa Barbara Conference Room* **MedEd Certificate Workshop: Focus Groups for Medical Education Evaluation and Research** *Jacob Schreiber, MA; Alan Liu, MD; Cha-Chi Fung, PhD* Focus Groups are a useful tool for educational program development. But there are lots of factors to consider. How should you come up with questions? What do you attune to while taking notes? And how do you manage multiple personalities at the same time? In this hands-on workshop, attendees will assume the roles of moderator, note taker, or participant to conduct focus groups about their experiences at the IME conference. Through first-hand exposure, participants will develop an understanding of the techniques of questioning, probing, managing group dynamics, and the types of data that result from the focus group experience.	*San Francisco Conference Room* **Conference Workshop: Balint Group Process: Reflecting on the Provider-Patient Relationship to Improve Wellness** *Francis N. Chu, MD; Vidush Athyal, MD; Katherine Knowlton PhD; Heena Panchal, MD* Balint groups help trainees understand and approach the provider-patient relationship as a therapeutic tool, provide insight, imagine the motivations, and enhance communication in the relationship. The Balint method enhances empathy and reflective practice. This workshop will provide a didactic session and an interactive Balint group experience. Time will be provided to discuss group process, leadership, and the practical aspects of starting and maintaining Balint groups.	*San Diego Conference Room* **Conference Workshop: Teach Your Learners How to Ace Their Interviews by Projecting a Growth Mindset** *Dale Vincent, MD, MPH, MACM; Jason Sapp, MD, MHPE* Some programs offer mock interview sessions along with tips to help learners prepare for their interviews. The purpose of this workshop is to provide a guide for using interview season as an time for you guide your learners to develop and practice a growth mindset. In doing so, you can teach your learners the secret to approaching their interviews with confidence, and a way to accomplish their interviews with grace and ease.
2:45 pm - 3 pm	**Break**			
3 pm - 4:30 pm	*Ballroom C* **Presentations of the Best of Cool Ideas: Transitions and Wellbeing** *Moderator: Yuya Hagiwara, MD, MACM* 1) **Personal Sustainability Practice – Integrating Practical Wellness into the Preclinical Curriculum.** *Yang, Katie; Taft, William; Cotter, Meghan; Tarula, Erick; Williams, Kathryn; Stephenson, Jason.* 2) **Promoting Professional Identity Formation in PGY-1 Residents through Self-Reflection and Mentoring.** *Berjis, Amir; Nyquist, Julie.* 3) **Building Mindfulness Habits in Fourth Year Medical Students.** *Williams, Alison; Nyquist, Julie.*	*Santa Barbara Conference Room* **MedEd Certificate Workshop: Understanding and Overcoming Machine Learning Bias in Medicine** *Patrick Crispen, EdD* Machine learning (sometimes mistakenly called "artificial intelligence") is susceptible to unintended biases that require careful planning to avoid. Machine learning algorithms trained on biased data will simply amplify that bias, negatively impacting patient safety. We'll spend the first part of this workshop introducing the basics of machine	*San Francisco Conference Room* **Conference Workshop: Illuminating Health Humanities in Undergraduate Medical Education through Curricular Mapping** *Pamela Brett-MacLean, PhD; Tracey Hillier, MD, MEd (HSE), CCFP, FRCPC; Helly Goez, MD, FRCPC; Hollis Lai, PhD* Health humanities are increasingly being introduced in medical education, albeit often opportunistically in variable ways across years and	*San Diego Conference Room* **Conference Workshop: Taking the V.I.T.A.L.S. to Interrupt Microaggressions** *Valencia Walker, MD, MPH; Christina Harris, MD* Negative implicit biases and stereotypes contribute to adverse health outcomes. Microaggressions are often a pervasive occurrence in health care settings that perpetuate negative stigmas about patients and colleagues. These subtle but offensive actions pose challenges for the recipients and the bystanders who

	4) **An Emotional Intelligence Curriculum to Help Ease Stress During Transition to Residency.** *Jurvis, Amanda, Nyquist, Julie.* 5) **A Peer Driven Curriculum for Wellness and Resilience in Medical Education.** *Heard, John; Kavoussi, Adriana; Goldman, Adam; Powderly, Kathleen.*	learning in plain English and providing examples of how machine learning is rapidly being adopted in many industries, including medicine. We'll then turn our focus towards cognitive biases and how these may (accidentally?) be embedded into machine learning. Finally, you'll learn how to be a better consumer and judge of machine learning-generated results and recommendations.	courses. Curriculum mapping provides a means for making curricular themes visible by inventorying learning opportunities available in educational programs. In this workshop we describe a systematic approach to mapping and characterizing health humanities offerings with a view to developing and enhancing opportunities for significant learning in this domain.	witness them. This workshop provides information for using a rubric (V.I.T.A.L.S.) to identify, process, and address microaggressions that health care professionals may encounter.

Attendance at five **MedEd Certificate Workshops** (addressing key skills or timely topics) over three years can lead to a MedEd Certificate of Achievement from the Department of Medical Education, Keck School of Medicine of USC. You must be enrolled in the **Medical Education Conference Certificate Program.**

ACCREDITATION STATEMENT: The Keck School of Medicine of USC is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

PRE-CONFERENCE WORKSHOP CREDIT DESIGNATION: The Keck School of Medicine of the University of Southern California designates this live activity for a maximum of *2.0 AMA PRA Category 1 Credits™.* Physicians should claim only the credits commensurate with the extent of their participation in the activity.

2-DAY INNOVATIONS IN MEDICAL EDUCATION CONFERENCE CREDIT DESIGNATION: The Keck School of Medicine of the University of Southern California designates this live activity for a maximum of *13.25 AMA PRA Category 1 Credits™.* Physicians should claim only the credits commensurate with the extent of their participation in the activity.

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IME 2020 Keynote Address

Inspiring Leadership in Academic Medicine in the 21st Century

Friday, February 14, 2020 • 11:45 am – 12:45 pm

Laura Mosqueda, MD

Dean, Keck School of Medicine of USC; May S. and John H. Hooval Dean's Chair in Medicine; Professor of Family Medicine and Geriatrics

Our budgets are shrinking, but our expectations keep growing. More than ever, we need leaders in academia who are both inspired and inspiring. Leading in these difficult times takes knowledge, intelligence, efficiency, and compassion. But even those skills aren't enough to motivate and empower people to perform the vital work that needs doing. In this lecture, Dr. Mosqueda will talk about lessons she has learned regarding inspiration: how to be inspired, stay inspired, and inspire others.

Laura Mosqueda, MD is the Dean of the Keck School of Medicine of USC, a professor of Family Medicine and Geriatrics and a professor at the USC Leonard Davis School of Gerontology. Prior to her appointment as dean, Dr. Mosqueda served as associate dean of Primary Care and the chair of Family Medicine.

An accomplished physician and researcher, Dr. Mosqueda is a national and international expert on elder abuse and neglect. She has testified in front of Congress and has been invited to the White House to discuss elder justice initiatives. She is the director of the National Center on Elder Abuse, a $2.95 million federally funded initiative which focuses on information regarding policy, research, training, and resources related to the neglect and exploitation of older adults for policymakers, professionals, and the public.

In addition to Dr. Mosqueda's leadership in clinical care and research, she has been actively involved in medical education. She has mentored medical students, graduate students, residents and clinical fellows. She has particular interest in care of vulnerable and underserved populations and precepts interprofessional health care students at a homeless shelter on Skid Row.

Certificate of Achievement

This award certifies that

Your Name

has successfully completed
five MedEd Certificate Workshops at the
USC Innovations in Medical Education Conference
February 2019

Julie G. Nyquist, PhD
Chair, Innovations in Medical Education Conference

Cha-Chi Fung, PhD
Co-Chair, Innovations in Medical Education Conference

Medical Education Conference Certificate Program (MedEd Certificate Program within the IME Conference)

Conference participants are being given the opportunity to earn a Certificate of Achievement through participation in a set of specially-designed workshops. The Department of Medical Education at the Keck School of Medicine of USC offers six interactive workshops each year at IME. The workshop activities are designed to maximize the transfer of knowledge and skills from the workshop setting directly to each participant's work setting. All registered conference participants can attend any of these workshops. The workshops are aimed at providing participants with the principles and essential skills needed by educators within key roles in undergraduate and graduate medical education settings: teacher, leader, scholar, and mentor.

Below is the three-step process to earn your IME Conference Certificate of Achievement.

Step 1: **Register** online at the link below so that we can track your participation.

Step 2: **Attend five MedEd Certificate Workshops** over three years during the IME Conference. To receive credit for each workshop you must submit the evaluation and feedback form online or provided in the session. Please make sure to enter your name and learning points.

Step 3: **Complete an online story form** about how you have changed your practice as a teacher, leader, mentor, or scholar based on your participation in two of the five workshops attended. Your story form will be sent to you after you complete your fifth workshop.

Remember, to be eligible to earn a certificate you MUST enroll.
Go to this link: **http://tinyurl.com/ime-meded-certificate**

Welcome to the 2020 Innovations in Medical Education Conference

The IME Conference joins together a growing community of learners, teachers, scholars, and leaders working together to promote change through innovation in health professions education. Our goal is to move education in the health professions toward a higher level of excellence and wellbeing by providing a forum for sharing innovative ideas and educational innovations.

By the end of the conference, participants will be better able to:

1. Utilize evidence-based principles of teaching, leading, mentoring, and educational scholarship in your work within health professions' education.
2. Identify techniques for enhancing the learning environment and the well-being of each of us within health professions' education.
3. Transfer cool ideas and innovations learned about at IME into your own heath professions' setting.

The USC Registration Desk will be located in the San Gabriel Ballroom foyer. The registration desk is open all day starting at 8:30 am on Friday, February 14, 2020 and 7:30 am on Saturday, February 15, 2020.

For those attendees who have paid the additional fee for CME Credit for this conference (13.25 credits), an email will be sent the week following the conference with instructions to complete your CME evaluation form and print your CME certificate.

The session evaluation and feedback forms are available online this year at a single URL for all sessions: **https://tinyurl.com/ime2020-evaluations**. For your convenience, a paper version can also used for each session. Please complete the evaluations prior to your departure from each session. Your feedback is valuable to the presenters and will help us plan future meetings.

Please place cell phones and beepers on vibrate and take any calls outside the meeting room.

Keck School of Medicine of USC

ACKNOWLEDGES EXHIBIT SUPPORT

Cardinal Level

TDS Health

Abstracts for Friday, February 14, 2020

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1 - 2:30 pm	Ballroom B2-C	Oral Presentations of Innovations	Undergraduate Medical Education	Developing a Pre-Clinical Spiraled Curriculum: Preliminary Data from Three Medical School Classes	Maltagliati, Anthony; Paree, Joshua; Vanderah, Todd	25
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1 - 2:30 pm	Ballroom B2-C	Oral Presentations of Innovations	Undergraduate Medical Education	Interactive Fiction: Using Technology to Bring Adaptive Patient Cases to the Classroom	Kim, Rory; Morningstar-Kywi, Noam	28
1 - 2:30 pm	Ballroom B2-C	Oral Presentations of Innovations	Undergraduate Medical Education	Medical Students Value an Approach to Wellness that Honors Individual Differences and Preferences	Edmonds, Victoria; Chatterjee, Krishanu; Stonnington, Cynthia; Vickers, Kristin	30
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2:45 - 4:15 pm	Ballroom B2-C	Oral Presentations of Innovations	Graduate Medical Education	Feasibility and Usefulness of a Novel Curriculum in Pediatric Developmental Screening	Dosman, Cara F.; Eliason, Sabrina; Andrews, Debbi; Gallagher, Sheila; Davila-Cervantes, Andrea; Guo, Qi; Hodgson, Carol S.	36
2:45 - 4:15 pm	Ballroom B2-C	Oral Presentations of Innovations	Graduate Medical Education	Mandatory Palliative Care Rotation for Anesthesia Residents at a Tertiary Academic Medical Center	Hagiwara, Yuya; Rowland, Ian; Streitz, Susanne; Thomsen, Timothy	38
2:45 - 4:15 pm	Ballroom B2-C	Oral Presentations of Innovations	Graduate Medical Education	There's an app for that! Pilot Implementation of PediCrisis 2.0 for Pediatric Anesthesia Fellows	Boucharel, Adria; Schreiber, Jacob; Nyquist, Julie	38
4:30 - 6 pm	Ballroom A-B1	Oral Presentations of Innovations	Graduate Medical Education	Pediatric Resident Curriculum on Addressing Parental Vaccine Hesitancy	Chen, Hsuan-hsiu Annie; Ben-Isaac, Eyal; Hernandez, Adriana; Pannaraj, Pia; Thompson, Michelle	41
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2:45 - 4:15 pm	San Diego Room	Special Poster Session, Poster #SPS-06	PBLI In Action: Quality Improvement Ideas and Results	Understanding the importance of Screening and Treating Sexual Transmitted Diseases in our community	Caceres, Narciso; Ananth, Mina	50
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11:30 am - 1 pm	Ballroom A-B	Saturday Poster Session, Poster #093	Teaching Methods - UME	Cardiac Murmur Small Group Activity for Preclinical Medical Student Learners	Nguyen, Tan; Thompson, Sean; Lucas, Alexa; Wray, Alisa; Reed, Matthew; Sakaria, Sangeeta	222
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Leadership to Support Wellbeing

Yanofsky, Samuel; Margolis, Rebecca; Nyquist, Julie
Children's Hospital Los Angeles and Keck School of Medicine of USC

Workshop Description: This workshop will engage you in examining the core elements of good leadership. We will then take you on a journey to explore wellbeing in your own environment (threats and supporting factors). Become a local champion for wellbeing, leaving the workshop with a mini-change plan for a small local change that could enhance wellbeing for your target group.

Rationale: Well-being is a topic of conversation in all national meetings in 2019, since there is a national crisis in relation to physicians in almost all specialties. Burnout is prevalent among all levels of health care practitioners and adversely affects both learner wellbeing and patient care. In a 2019 National Academies of Sciences, Engineering and Medicine Report entitled "Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being" the authors looked at factors that support well-being as well as factors that undermine well-being. This workshop combines materials from this resources and prior literature with what is known about excellence in leadership to discuss this important player in promoting wellbeing – our educational and physician leaders.

Learner Outcome Objectives: Participants will be better able to:
1. Identify own values and needs
2. Identify leader behaviors that support wellbeing and those that can undermine own wellbeing
3. Identify positive factors and barriers in the work environment in relation to personal wellbeing
4. Develop a mini-change plan for a small local change that could enhance wellbeing for a target group.

Intended Participants: Anyone working in health profession's education – faculty, staff or learners.

Methods: Methods include use of self-assessment tools, brainstorming, small and large group discussion, and very brief formal introduction of concepts.

Activity Timeline:

	Time	Activities
1	1-20	Values: Introduction, conduct of a values exercise and discussion of the importance of values in leadership and in thriving as professionals. With debrief (Objective 1)
2	21-45	Leadership to support wellbeing: use of tool (Leadership that Supports Wellbeing: Assessment of Your Unit's Leader, Self-assessment on Effect on Your Wellbeing); Discussion of principles of leadership included in the form (values, 21st century mindset, knowledge of own strengths and weaknesses, emotional intelligence, leadership styles, leadership skills) with discussion. (Objective 2)
3	46-75	Workplace factors and wellbeing: This section includes a brainstorm and discussion of five workplace areas that can affect wellbeing (Values, Fairness – a sense of justice, Control (amount of input), Reward (Extrinsic and Intrinsic), Community (Quality of relations with others), Workload. (Objective 3)
4	76-105	Introduction to Mini-Plans: Review a sample mini-plan to enhance leadership and wellbeing along with examples of "goals" for such mini-plans. One example is to make a plan to help efficiency of practice by partnering with leadership to enhance wellbeing. Planning Activity: Each participant will use a worksheet to design a mini-plan for a small local change that could enhance wellbeing for your target group and then share at their tables (Objective 4)
5	106-120	Wrap up and session evaluation

Take Home Tools: Handout with references; values exercise, Leadership and Wellbeing tool, and mini-planning form.

Inspiring Leadership in Academic Medicine in the 21st Century

Mosqueda, Laura
Dean, Keck School of Medicine of USC

Keynote Description: Our budgets are shrinking, but our expectations keep growing. More than ever, we need leaders in academia who are both inspired and inspiring. Leading in these difficult times takes knowledge, intelligence, efficiency, and compassion. But even those skills aren't enough to motivate and empower people to perform the vital work that needs doing. In this lecture, Dr. Mosqueda will talk about lessons she has learned regarding inspiration: how to be inspired, stay inspired, and inspire others.

Mindfulness Exercises and Effects on Perceived Workload: A Pilot Study

Shoaib, Abdullah; Agharokh, Ladan
The University of Texas Southwestern Medical Center

Problem Statement: The current approach to teaching mindfulness, does not adequately prepare learners to use these skills when faced with stress or other challenges.

Rationale: Roughly 40-80% of residents experience symptoms of burnout, which is correlated to poor academic performance, suicidal ideation, and depression. As such, medical schools have started to include wellness initiatives throughout their curriculum. These sessions are often delivered in lecture format, leaving little space for application or practice. This stands in stark contrast to how other skills, such as medical procedures, are taught, where practical application is emphasized. One of the most consistently proven protective factors against burnout has been mindfulness. Mindfulness exercises have been used in helping patients in psychiatry, and have also been shown to be associated with decreased stress in medical trainees. However, little study has been to show how this decrease in stress translate to improvement in trainees' ability. By investigating perceived workload, this study hopes to examine how mindfulness impacts trainees' ability to manage the challenges they are tasked with.

Methods: Fourth year medical students enrolled in the pediatrics track of the "Transition to Residency" capstone course participated in high-fidelity acute care simulations. After their first simulation session, students (n = 24) completed a survey of perceptions of mindfulness activities as well as a NASA-TLX questionnaire, a validated scale that quantifies perceived workload over six different domains. After the first simulation session, one group of students (n = 16) took part in a workshop in mindfulness activities, while the other group (n = 8) received no interventions. Then, prior to the second simulation session, all students were instructed to use any mindfulness exercises they were comfortable with to help alleviate any stress they may experience. After their second simulation session, the students completed another NASA-TLX assessment to quantify their perceived workload.

Results: NASA-TLX scores were compared before and after the intervention in both the control and the intervention group. The differences in the perceived workload between the two simulations were significantly different, with the control group having an increase in their perceived workload of 5.71, and the intervention group having a decrease in their perceived workload of 3.16 ($p = 0.04$). This metric controls for differences in the content of each simulation and the decrease in perception of workload due to student's familiarity with the simulation environment, both of which are confounding factors in perceived workload. In addition, survey results about perceptions of mindfulness were analyzed. Based on survey results, it appears students felt that mindfulness exercises were markedly more effective for people in general than specifically for themselves ($p < 0.001$). Furthermore, there appears to be little correlation between how familiar students are with mindfulness and how effective they feel mindfulness is for themselves ($m = 0.19$, $r2 = 0.03$). This highlights known challenges with how to impact a learner's practice of mindfulness techniques; how to address these challenges is worth further investigation.

Potential Impact: By pairing mindfulness exercises and wellness behaviors with challenging situations, trainees will potentially be better equipped to cope with stressors. Viewing mindfulness as a vital skill necessary for physicians to master can drastically shape how educators approach teaching mindfulness.

References:

1) Chaukos D, Chad-friedman E, Mehta DH, et al. SMART-R: A Prospective Cohort Study of a Resilience Curriculum for Residents by Residents. Acad Psychiatry. 2018;42(1):78-83.
2) Goldhagen BE, Kingsolver K, Stinnett SS, Rosdahl JA. Stress and burnout in residents: impact of mindfulness-based resilience training. Adv Med Educ Pract. 2015;6:525-32.
3) Park ER, Traeger L, Vranceanu AM, et al. The development of a patient-centered program based on the relaxation response: the Relaxation Response Resiliency Program (3RP). Psychosomatics. 2013;54(2):165-74.

Developing a Pre-Clinical Spiraled Curriculum:
Preliminary Data from Three Medical School Classes

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University of Arizona College of Medicine -Tucson

Problem Statement: This study aims to improve medical student retention of block material and USMLE Step 1 preparedness throughout the pre-clinical curriculum.

Rationale: The volume of new information conveyed throughout medical school is immense, with the pre-clerkship curricula of most LCME-accredited medical schools (n=142 responses) opting to organize content and assessments into blocks by organ system-based questions (85.2%)(1). When content is divided into discrete blocks, as is the case for the University of Arizona College of Medicine – Tucson (UACOM-T), a significant amount of information is likely lost due to prolonged nonuse. Attrition of nonuse pre-clerkship medical knowledge has been described as "around 70% retention after one year of nonuse, 40-50% after two years, and 30% after four years or more"(2) with spaced practice posited as a feasible and cost-effective way to improve the effectiveness and efficiency of learning(3). A formal "Spiraled Curriculum" which periodically revisits material from previous blocks is not well documented by the AAMC and is a novel implementation at the UACOM-T.

Methods: We first surveyed medical school classes of 2020 and 2021 prior to the intervention of a Spiraled Curriculum on their confidence in the current UACOM-T curriculum and in themselves to prepare for USMLE Step 1, perceived retention of material from previous pre-clerkship blocks, and receptivity to a "Spiraling Curriculum" wherein students would be tested weekly on material learned from previous blocks in the form of NBME-style questions. We created 500 clinical vignette questions which were vetted by faculty with expertise in their respective fields. On weeks with no examinations we mandated attendance for in-class assessments ranging from 10-20 questions with total time allowed equated to 90 seconds per question. Questions covered material from previous blocks and were used purely for self-assessment rather than part of a grade. Immediately following assessments, which were taken on an electronic device, learners were informed of their scores and reviewed the questions with a dedicated expert faculty in the topic(s) covered via slides and written explanations. There were 32 sessions total, with sessions (not in order) including: musculoskeletal/dermatology (5), neurology (4), pharmacology (4), histology/pathology (3), cell biology (3), microbiology (3), cardiology/pulmonary/renal (2), digestion/metabolism/hormones (2), biochemistry (2), biostatistics (2), genetics (1) and psychiatry (1).

Results: Response rates were 36% (n=46) and 45% (n=52) for classes of 2020 and 2021, respectively. On a scale of 1-10, 1 being "strongly disagree", 5 being "neutral" and 10 being "strongly agree", the classes of 2020 and 2021 ranked confidence in the non-spiraled curriculum to prepare them for Step 1 as 5.2 (SD 2.2) and 5.6 (SD 2.0); confidence in themselves to perform well on Step 1 as 6.3 (SD 2.3) and 6.1 (SD 2.3); perceived retention from previous blocks as 5.0 (SD 2.5) and 4.6 (SD 1.9); and belief that a Spiraled Curriculum would have helped them retain information as 8.2 (SD 1.7) and 8.2 (SD 2.2). Survey data from the Class of 2022, who received the Spiraling Curriculum intervention, will be available in early 2020. We will also assess average USMLE Step 1 performance across the three classes when data is available in Spring of 2020, taking into consideration differences in baseline characteristics, potential confounders, and limitations of a modest cohort size at a single academic institution.

Potential Impact: Our medical students have neutral confidence in both themselves and a traditional block-style curriculum to prepare for the USMLE Step 1 but are highly receptive to a Spiraled Curriculum. This project will provide valuable data to improve upon the curricula employed by most U.S. medical schools.

References:

1) Association of American Medical Colleges. Curriculum Reports. 2015-2016 data "Curriculum Structure During Pre-Clerkship Years: Organization & Timing"

2) Custers E. Long-term retention of basic science knowledge: a review study. Adv in Health Sci Educ. 2010. 15:109-128.
3) Kang, S. H. Spaced Repetition Promotes Efficient and Effective Learning: Policy Implications for Instruction. Policy Insights from the Behavioral and Brain Sciences. 2016. 3(1), 12–19.

Examining Our Education Innovation Culture at Baseline

Zaidi, Nikki; Ross, Paula; Morgan, Helen; Yang, Jun; Koivupalo, Laurie; Mangrulkar, Rajesh
University of Michigan

Problem Statement: We launched a health sciences innovation initiative to actualize our goal to influence and impact health sciences education beyond quality improvement.

Rationale: We collected baseline data to examine current innovation practices and beliefs among members of our organization. We aimed to examine four dimensions of an innovation culture: cultivate, support, promote, and achieve. We sought to understand the degree to which we were: 1) cultivating an education innovation culture that inspired collaboration and creativity; 2) supporting a culture of education innovation with necessary resources; 3) promoting education innovation with intelligent risk-taking and dissemination of new information; and 4) achieving education innovation by deconstructing barriers and translating findings into practice.

Methods: We developed a 21-item education innovation culture survey using evidence found in the literature and vetted by members of a core team responsible for leading an institutional innovation initiative. We established face validity through pilot testing and calibration with a small group of potential respondents to ensure a common understanding of the content. Feedback provided by this group of respondents resulted in further refinement of the survey. The survey was launched to all employees and learners within our organization via two direct emails from organizational leadership and three separate announcements in a weekly all-employee update email. We further validated our baseline survey data using exploratory factor analysis to determine whether items loaded as expected, based on pre-identified domains in innovation culture.

Results: We collected baseline survey data for three months; which yielded 309 respondents from clinical faculty and staff (43%), non-clinical faculty and staff (37%), learners and trainees (16%), and other stakeholders (4%). Survey results suggested that our organization has the potential to lead innovation in health sciences education that will make a difference in health care. Yet, while we encourage employees and learners to attend activities in the pursuit of new knowledge, innovation efforts could provide more resources (technological and financial) and create an environment where people are able to work creatively during work hours. We should also promote behaviors that inspire innovation in education (e.g., intelligent risk-taking) and deconstruct barriers within current work environments. Although many respondents indicated having observed innovation within our organization, fewer reported participating in innovation. Therefore, we can increase awareness of opportunities for education innovation support. Results further suggested that we must ensure everyone feels included in this initiative, since many respondents indicated that senior leadership and faculty were primarily responsible for driving innovation. All 21 items loaded on two factors that confirm our understanding of how innovation culture is cultivated—through an environment that supports innovation and fostering of behaviors that support innovation.

Potential Impact: These results allow us to better understand the current state of education innovation at Michigan Medicine and what can cultivate a culture of innovation here. We intend to resurvey our community in two years to determine the impact of our efforts.

References:

1) Dobni, B. The innovation blueprint. Business Horizons, 2006; 49:329 -339

Interactive Fiction: Using Technology to Bring Adaptive Patient Cases to the Classroom

Kim, Rory; Morningstar-Kywi, Noam
University of Southern California School of Pharmacy

Problem Statement: The integration of electronic patient cases into a PharmD curriculum to engage learners and facilitate self-directed learning and formative feedback.

Rationale: Health care professions graduates must perform sound clinical reasoning and solve therapeutic problems in high stakes environments. The use of virtual patients has been supported by medical and pharmacy education accrediting bodies for promoting deep learning and patient application in a safe environment. [1,2] However, the use of this technology requires significant financial and human resources. [2] Meanwhile, less costly computer technology has been used since the 1980's to create interactive fiction, or text-based adventure games, where players make choices based on a narrative to complete a quest. [3] This technology, available on open use platforms, can be leveraged to allow learners to explore the narrative of a patient presentation, gather pertinent information, select treatment and explore patient outcomes. The purpose of this study is to assess the feasibility and perceived efficacy of using interactive fiction technology to deliver electronic patient cases.

Methods: The electronic cases (eCases) were initially designed and implemented for 198 first year PharmD students enrolled in the required Non-prescription Therapies course in the spring of 2019. The initial implementation was a two session series on the management of smoking cessation. The following process was used to develop and assess the eCases: 1) Develop learning objectives for each session and eCase, 2) Plan assessment of implementation, 3) Build the eCases using free open-source software (~ 6 hours per case), 4) Deploy initial eCase in classroom followed by feedback survey, 5) Refine second eCase based on feedback, and 6) Deploy second eCase in classroom followed by feedback survey. The eCases were programmed by a current PharmD student in collaboration with faculty using an open-source interactive fiction development software. They were delivered using learning management software (Blackboard) and accessed by each student on their individual electronic devices.They were incorporated into the classroom session in the following format: 1) Foundational knowledge content delivery, 2) Individual eCase exploration, and 3) concluding with group eCase debrief. After the first eCase, the learners were asked to complete a feedback survey regarding accessibility and satisfaction. After the second eCase, questions about perceived usefulness for students' own learning were added. Following the initial implementation, eCase development has expanded to other courses in the curriculum.

Results: For the initial implementation of the eCases accessibility, student satisfaction, and perceived utility were assessed. 131 students responded to the survey following the implementation of the first eCase and 96% were able to access the case on their individual device. 98% of students found the eCase easy to navigate and none of the students indicated that it was "not helpful". For the second eCase, 97 students responded to the survey which reflected class attendance. Students agreed or strongly agreed that this type of case delivery helped them to learn the material (97.9%), assess their understanding (97.9%), and learn at an appropriate pace (97.9%) (n=93). 95.7% indicated that they would like to see more eCases in the curriculum (n=93). 71.6% of students endorsed this as an in-class active learning activity, 16.8% would have preferred to explore the case outside of class and debrief in class, 11.6% preferred this as an optional activity, and only 1% would have preferred not to have had the activity (n=93). Since the initial testing of the eCases, there has been considerable faculty interest in eCase development. There are currently 13 faculty members developing and implementing cases for 9 different courses. Additional objective data assessing association between course performance and eCase utilization is currently being collected for fall 2019 courses and will be ready for presentation at the time of this conference.

Potential Impact: The use of eCases during classroom sessions is a feasible method for engaging learners in clinical reasoning, reinforcing therapeutic knowledge, promoting self-directed learning, and providing real-time formative feedback to learners.

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2) Smith MA, Siemianowski LA, Benedict N. Virtual patient case sharing across two schools of pharmacy. Am J Pharm Educ. 2016;80(9): Article 153.
3) Lancy DF, Hayes BL. Interactive fiction and the reluctant reader. The English Journal. 1988;77(7):42-46.

Medical Students Value an Approach to Wellness that Honors Individual Differences and Preferences

Edmonds, Victoria [1]; Chatterjee, Krishanu [1]; Stonnington, Cynthia [2]; Vickers, Kristin [2]
[1] Mayo Clinic Alix School of Medicine- Arizona; [2] Mayo Clinic

Problem Statement: Wellness initiatives within medical education must be valuable to the students they serve. Students are key informants for program improvement.

Rationale: Medical training is associated with distress and burnout; yet sufficient evidence-based strategies to promote medical student well-being and prevent burnout are lacking [1]. The implementation of wellness curricula and programs is labor and cost intensive. Without adequate evidence to support their efficacy, required participation in such programs has been critiqued as yet another source of burnout [2]. There is a paucity of literature surrounding appropriate methods for evaluating the success of wellness programs [3]. Our study aimed to assess Mayo Clinic Alix School of Medicine-Arizona (MCASOM-AZ) students' perception of a wellness curriculum and their attitudes towards wellness, academics, and career-related success through structured, one-on-one interviews. We hypothesized that, even more than quantitative surveys, in-depth interviews would allow for common themes to emerge amongst students' responses that could be used to inform changes in the wellness curriculum.

Methods: MCASOM-AZ instituted a coordinated, multi-pronged wellness program in 2017, which included stress management and resilience training, student initiated wellness activities, pass/fail preclinical assessments, disability services and academic counseling, and subsidized access to fitness centers. All MCASOM-AZ students engage in the curriculum-embedded components of the curriculum and are offered the opportunity to participate in non-mandatory wellness activities and events. 20 MCASOM-AZ medical students were recruited during the first week of the 2018-2019 academic year (July 16-20th, 2018). A study team member collected answers from consenting participants to a set of standardized questions via audio-recorded interview. Interviews were de-identified and transcribed. Questions ranged from "How do you personally define wellness" to "What would thriving or succeeding in medical school look like you?" and "Is the wellness curriculum at MCASOM biased towards a certain kind of student or demographic?" Transcripts were analyzed for common themes, using methods of content analysis.

Results: Across the interviews, participants were able to describe wellness (though they defined it differently) and appreciated the importance of wellness during the medical school experience. Qualitative themes point to important considerations in building and maintaining wellness programming for medical students. There was a theme of subtle skepticism about addressing "wellness" in medical school without addressing a predominant medical culture that contributes to student and physician burnout and insufficiently emphasizes wellness. Some expressed concern that a wellness curriculum could be seen as a "band-aid" attempting to cover a larger problem. A participant cautioned that the medical school could take the unhelpful perspective that "We're gonna push our students really hard. We're gonna have high expectations. This is gonna be a rigorous curriculum. This is gonna stress them out, but it's OK because we have a wellness program… It's treating the symptoms rather than the problem." These medical students strongly discouraged mandatory wellness activities. What is a valued wellness activity for one student can be perceived burdensome to another (e.g., "keeping the exact same system, but also, now there's a yoga class you're supposed to go to, doesn't address the real problem."). Instead, many described the importance of a diverse and inclusive conceptualization of wellness that allows for individual differences.

Potential Impact: Wellness is important to medical students and ongoing program evaluation and development is necessary to address diverse perspectives and preferences. Interviews with students revealed a collective desire for individualization and choice in wellness program delivery.

References:

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Developing an Inspirational Leadership Curriculum for Residents

Nyquist, Julie; Hohensee, Natalie; Corey, Britney

Workshop Description: Join us for an interactive session on developing leadership training within graduate education in health professions (e.g., GME), with a focus on content and process. Take home a tool to guide your planning activities. Led by educators from a variety of backgrounds with experience teaching students, residents, and faculty.

Rationale: Healthcare is in a place of upheaval - we must lower the cost of caring for patients while simultaneously improving outcomes and the patient experience (1). To accomplish this lofty goal, healthcare professionals must be equipped with leadership skills. Research suggests that improving leadership skills will provide better outcomes for patients and health care organizations (2). Furthermore, millennial learners will thrive with leadership training, as they have a thirst for instruction and independence (3). The ACGME and its sister organizations around the world have identified milestones that contain elements of leadership, specifically practice based learning and improvement, interpersonal and communication skills, and systems-based practice. In spite of the wide recognition of the value of leadership, very few formal and validated leadership curricula exist in graduate medical education. A similar need exists in pharmacy, dentistry and allied health professions' education. The goal of this workshop is to provide educators with the necessary skills to begin to develop a leadership curriculum at their respective programs.

References:

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2) Prossack, A. 2018, 'How Millennials are Changing the Way We View Leadership', Forbes, 18 May, accessed 10 April 2019, <https://www.forbes.com/>.
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Leaner Outcome Objectives:

1. Articulate the need for formal training in leadership for residents and fellows in the health professions
2. Select leadership content important to own learners and setting
3. Match leadership content to interactive teaching techniques
4. Plan a leadership curriculum utilizing a planning worksheet

Intended Participants: All participants at the IME conference who are interested in leadership training as part of the overall training at the graduate (residency, fellowship) level of health professions' education.

Methods: The workshop will utilize a variety of methods including brainstorming, storytelling, use of mind maps and completion of initial items on a planning form for developing a curriculum to help residents or fellows learn about leadership and build leadership skills.

Activity Timeline:

Time	Name of segment and process
01-05	Review objectives and introduction of presenters
06-15	Small Group Brainstorming on the need for leadership training at the residency level with Large Group Debriefing
	Debrief the attention grabber: Brainstorming.
15-20	Formal Presentation of the Planning Process – Why, Who, What, When, Where How
21-30	Task: Participants complete the Why and Who on their Planning Worksheet

Time	Name of segment and process
31-40	Share some potential leadership topics – participants mark on their mind maps the topics that match their why and who.
46—60	Discussion of teaching techniques with stories from the group leaders activities they are used
61-75	Work in pairs to select a couple of topic and record ways each could be taught.
76-90	Pulling it together, discussion and session evaluation.

Take Home Tools: Curriculum planning form, Mindmaps that summarize key areas that could be addressed in a leadership program for senior student, residents or fellows in any health profession. A tool to link curricular content with methods for teaching and for determining how well the learner outcome objectives were met.

The Problem with the "Problem Learner": Using a Systematic Approach To Help Learners Learn

Butani, Lavjay; Manu, Madhok
UC Davis, Children's Minnesota

Workshop Description: Participants will view the approach to the 'problem learner' through the lens of situated learning theory-systematically exploring each facet of the learning environment that can possibly contribute to struggles that learners experience. Using an interactive format, participants will work to develop an approach to identifying, characterizing and helping learners with problems. Participants will leave with a road-map to use in their own teaching and educational program.

Rationale: The problem with 'problem learners' often lies outside of the learner and could be a reflection of a suboptimal learning environment. This behooves us to more systematically and thoughtfully engage learners and educators to better diagnose the 'problem' so that optimal solutions can be found and implemented to help every learner learn.

Learner Outcome Objectives: At the end of the session participants should be better able to:
1) Describe different contributors to learning impediments experienced by learners, and
2) Propose an action plan to diagnose and help 'problem learners' using a systematic approach.

Intended Participants: Faculty and staff who interact with learners at any level, clerkship and residency program directors and Chief Residents.

Methods: Using a combination of large group discussion, brief skill building didactics and small group work, participants will be introduced to a framework to help systematically and holistically explore the root cause of problems when learners struggle to meet expectations. This will be followed by small group work on developing strategies to help all learners learn and optimally progress through the curriculum.

Activity Timeline:

00:00-00:10:	Introductions and review of goal and objectives
00:10-00:20:	Think pair share- Share about a recent 'problem learner' and how you addressed that
00:20-00:30:	Debrief
00:30-00:45:	Brief didactic on the approach to a 'problem learner' (using the "STP" model) and large group discussion on a sample 'problem learner'
00:45-1:15:	Small group work on group's own cases (or a sample case if group doesn't have a case). Role playing of a problem learner and program director. The participants in groups of 4 (2 role playing and 2 observers) will be provided with a brief script describing the issue for both the roles. They will discuss and try to resolve the issue. Two observers will take notes on the approach. The teams will swap roles after 5 minutes and discuss a second scenario
1:15-1:30:	Report back, final thoughts and questions

Roses and Thorns: Solution Focused Feedback in Medical Education

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Nova Southeastern University

Workshop Description: Participants will use this workshop to learn how to change their approach to problems in their workplace, career and even their life outside of work. The workshop is loosely based on Solution Focused Brief Therapy (SFBT) in which a problem is addressed through focusing on the solution, rather than by focusing on the problem itself. Participants will use reflection on past negative and positive experiences to create a tool they and their colleagues can use to create positive change.

Rationale: Feedback in academic settings, including medical education, is often driven by a problem or negative outcome. However, tools such as Solutions Focused Brief Therapy (SFBT) and Appreciative Inquiry (AI) have been used in very different populations and environments to utilize the positive or goal-oriented side of a problem to reach a solution, rather than focusing on the negative or problem itself. A meld of the two approaches to problem-solving could bring about further innovation and change in academic and medical-education settings for not only the academicians but also their students and future clinicians.

Learner Outcome Objectives: After completing the workshop, learners should be able to:
1) Reflect on a given situation that has a perceived negative outcome.
2) Identify the desired positive outcome for any situation.
3) Successfully create a list of steps that could be taken to create a solutions-based change for a negative-outcome scenario that has occurred in the past.
4) Identify a current problem or negative outcome that requires change and create a stepwise solutions-based plan that might bring about a positive outcome.
5) Create a feedback form that they will be able to share with their colleagues and use to implement solutions-based change in their own workplace.

Intended Participants: Because this workshop is based on tools used in a broad audience including therapy and large organizations, it is likewise targeted to a large audience. Anyone could utilize the workshop's tools which can be applied differently depending on the participant and the intended use.

Methods: Participants will begin by discussing and reflecting on the strengths and weaknesses of their program, course, curriculum or another aspect of their career. They may choose to provide examples as they discuss the current approach to feedback in medical education. Participants will then be introduced to a description of the origin and goals of AI and SFBT which inspired our workshop on Solution Focused Feedback in Medical Education. They will then be asked to bring their own experiences into further reflection on how to use Solution Focused Feedback to bring about positive change. Participants will have the opportunity to work in small groups to create a feedback form that could be used by their colleagues and even organization to encourage positive goal-oriented feedback to empower them to enact change.

Activity Timeline:

10-minutes:	Play "Curriculum Roses and Thorns"- write a program/session strength on the red paper and a area for improvement on the green paper. Have willing volunteers report back. Use one of the given strengths/areas of improvement as an example later
5-minutes:	iscussion on current approach to feedback in medical education; focus on what is wrong
20-minutes:	Large group discussion on possible pitfalls of current approach: often tries to derive solutions based on what is wrong and often leads to venting/griping vs change; Squeaky wheel phenomenon
10-minutes:	Presentation on the Tenents of Solution-focused brief therapy: introduce the idea of a "dream/ideal" situation to form goals
15-minutes:	Discussion of how this may be applicable to feedback in medical education; "Think of a teaching session where you were most engaged. What were the positive elements of that session?"; Use the example from the Roses and Thorns Game .
30-minutes:	Small group activity creating feedback forms as a take home tool

Take Home Tools: Creating feedback forms

Feasibility and Usefulness of a Novel Curriculum in Pediatric Developmental Screening

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Problem Statement: There is little curriculum literature on how to train residents in developmental standardized screening instruments (SSIs).

Rationale: Developmental disorders are detected sooner with SSIs. Needs assessment interviews were conducted in our university's General Pediatrics (GenPeds) Residency Program; the Coordinators of GenPeds Community Rotations and Continuity Clinics indicated that SSIs were neither used by GenPeds clinical preceptors nor taught to residents. On their Developmental Pediatrics (DevPeds) rotations, residents' most common personal learning objectives were to identify red flags in children at risk of developmental disorders (26%) and to know resources for identified children (31%). A novel curriculum was developed in response to these needs. We assessed feasibility of implementation and resident perceptions of usefulness.

Methods: Longitudinal curriculum interventions were implemented (2011-2016) and evaluated (2016-2019). Curriculum purpose was to offer pediatric residents hands-on screening experience to empower their future decision on whether screening would be used in their own clinical practice. Two commercially available and well researched SSIs were used (SSI-1 parent concerns, SSI-2 developmental milestones, used when positive SSI-1). During the DevPeds rotations in year (R) R1 and R3 (n=63), Screening Days (SDs) provided high volume practice in two GenPeds clinics' waiting rooms. Practice was enhanced by varied teaching methods (simulation workshop, case-based interactive tutorials, five short answer question (SAQ) exams plus feedback). Resources provided included publications for self-directed learning, a Pocket Guide (milestones and referral resources), and SSI-1 and SSI-2 in all GenPeds clinics throughout the Program, where screening is most important. SSI use was added to GenPeds clinics Learning Objectives. For curriculum evaluation, feasibility and usefulness were estimated by examining the outcome measures resident screen volume (logs completed on SDs), attitude surveys (n=36, distributed to resident at each end-year, Likert scale 4 strongly agree, 3 agree, 2 disagree, 1 strongly disagree), and exam scores (from the five SAQs).

Results: Devpeds rotation screening volume (mean) was SSI-1 10.65 (range 3-25) and SSI-2 3.18 (0-12), consistent with Canadian ratio for positive SSIs. However, in GenPeds clinics, only six residents screened (SSI-1 0-20, SSI-2 0-5); twelve (43%) preceptors (response rate 28/44) used screening, consistent with resident comments on GenPeds screening barriers. Ninety-five % of residents gave positive feedback on DevPeds rotation SDs. All residents felt comfortable using SSI-1; 97.22% for SSI-2. Paired-t-test showed that comfort level using both SSIs significantly increased from baseline to end-year (from mean=2.63 to mean=3.63, and from mean=2.54 to mean=3.50, $p<.001$). Thirty-one residents (83.11%) planned to use SSIs in their future practice. Greater SSI volume on DevPeds rotation was strongly correlated with resident exam scores (parent concerns, 0.452, $p=0.016$; milestones, 0.461, $p=0.031$). Overall, PEDS volume correlated with deeming screening important (0.385, $p=0.032$).

Potential Impact: Lessons learned: New curriculum on DevPeds rotation was feasible and useful. Better screening training of, and greater use by, GenPeds preceptors might yield similar success in GenPeds clinics. Future study would detect ultimate usefulness of the curriculum if Graduates were using SSIs in practice.

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Mandatory Palliative Care Rotation for Anesthesia Residents at a Tertiary Academic Medical Center

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Problem Statement: Recognize that palliative care rotations can improve skills in all palliative care domains for trainees in nontraditional specialties.

Rationale: Palliative Care (PC) skills are applicable to all physicians regardless of specialty. Unfortunately, there are limited PC training opportunities for anesthesiologists. Majority of anesthesia residency programs do not have PC as an elective rotation. This project will assess an initiative focused on enhancing core primary PC skills, particularly for trainees in Anesthesia by completion of a 4-week mandatory PC rotation.

Methods: The learners consisted of anesthesia residents at the University of Iowa during the 2018-2020 academic year. The PC rotation included a 4-week standardized curriculum covering all PC domains. Residents were provided educational materials and attended all didactic sessions. All had clinical rotation on an inpatient PC consultation service including a PC unit. All residents were asked to complete a survey including: 1) a standard session evaluation survey to examine learner reaction to the training; and 2) a retrospective pre/post self-assessment survey on confidence in all PC domains.

Results: The project is ongoing. Of to date, 14 residents, 10 (71%) completed the survey. Analysis of paired evaluations showed significant improvements in residents' confidence in defining and explaining the role of hospice and palliative care ($P<0.001$), referring appropriate patients to PC ($P<0.001$), describing the role of an interdisciplinary team($P<0.001$); assessment and management of pain ($P=0.002$), non-pain symptoms ($P=0.002$) and common signs and symptoms at end-of-life ($P<0.001$); opioid management ($P<0.001$), identifying psychosocial distress ($P<0.001$), and identification of patient and family values, cultural beliefs and practices ($P=0.003$); conducting goals of care discussion ($P<0.001$) including code status discussion ($P<0.001$) and end-of-life discussion ($P<0.001$). Most respondents would recommend PC rotations to others, and felt the rotation to be essential.

Potential Impact: Anesthesia residents reported PC rotation improved their confidence in all PC domains. PC rotation was considered valuable and should be considered as a mandatory rotation for anesthesia residencies.

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There's an App for That! Pilot Implementation of PediCrisis 2.0 for Pediatric Anesthesia Fellows

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Problem Statement: Pediatric anesthesia fellows need to be able to quickly access rarely used knowledge to manage rare critical events.

Rationale: Intraoperative emergencies can lead to preventable patient harm because even experienced clinicians can make errors related to cognitive overload while managing crises. Phone apps are commonly used by providers in the operating room, and they can serve as cognitive aids (CAs). Expertly curated information presented in the form of an app may improve outcomes by providing specific, accurate, and timely support to providers during crisis events. In fact, one study found that the electronic version of a paper checklist, and not the paper version, had a significant positive impact on event management. The Pedicrisis App is a free tool developed by the Society for Pediatric Anesthesia. It was launched in 2018 to use during critical events. Simply introducing CAs into an existing practice will not necessarily effect change. CA development must be coupled with deployment strategies. Our project goal is to pilot an implementation strategy for the PediCrisis app.

Methods: This intervention will target 50 pediatric anesthesia fellows at five academic institutions (Children's Colorado-PI, CHOP, Children's National, Pittsburgh Children's, Texas Children's) and will be delivered in a two-hour session. Learners will be systematically guided through ten progressive disclosure cases using a stepwise, timed method that will require participants to diagnose and manage rare critical events in a low fidelity, simulated, and time-pressured environment. Participants will be randomized into odd and even numbered groups. Each number group will use their memory plus the internet to complete 5/10 cases (control group), and the app for 5/10 cases (experimental group) in an alternating manner. Diagnosis and management questions will be answered by participants on a de-identified data collection sheet that will be used for comparison of the number of correct answers obtained in the control and experimental groups. A focus group will also be conducted with participants at the primary site (Colorado). The focus group will explore participant reactions to the session and app itself, and perceptions regarding barriers to the use of cognitive aids within the clinical environment.

Results: Data collection sheet analysis will allow comparison of the number of correct answers obtained per scenario in the control and experimental groups. A focus group will explore participant reactions to the session, participant reactions to the app, and perceptions regarding barriers to the use of cognitive aids in the clinical environment. Primary site preliminary data (qualitative codes, quantitative data from the data collection sheet) will be collected by Spring 2020. Gleich et al. found that study participants using CAs performed more correct steps in simulated crisis scenarios [1] and we expect that participants using the app in our study will answer more diagnosis and treatment questions correctly when compared to the control group. Clebone et al found that a convenience sample of providers rated the PediCrisis app as 'excellent' overall [2]. We expect that our sample of participants will rate the app similarly. Goldhaber-Fiebert et al identified safety culture & training as possible barriers to the routine use of CAs during perioperative emergencies [3]. It will be interesting to discover the perceptions of our participants regarding this matter.

Potential Impact: If successful this could provide a model for other specialties thinking about integrating usage of CAs into training, as well as those tasked with recognizing and treating rare, potentially catastrophic, events (ED, ICU, EMT, military).

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Pediatric Resident Curriculum on Addressing Parental Vaccine Hesitancy

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Children's Hospital Los Angeles

Problem Statement: Pediatricians must incorporate emotional communication and social media strategies to effectively persuade vaccine hesitant parents.

Rationale: The World Health Organization identifies vaccine hesitancy as one of the top ten global health threats, as evident from the various vaccine-preventable disease outbreaks across continents. Physicians have significant influences on parental decision-making, but pediatric residents often feel unprepared. Anti-vaccination groups' active social media presence further challenge pediatricians' efforts in increasing vaccination acceptance. Traditional vaccine education focuses on statistics and facts, overlooking the underlying emotional complexity of vaccine hesitancy. To effectively persuade vaccine hesitant parents, pediatricians must use both logical and emotional communication strategies. Pediatricians must also be knowledgeable and critical of vaccination campaigns and information sources on social media platforms. A multimodal vaccine curriculum is needed to increase pediatric residents' knowledge, skills, and confidence in addressing parental vaccine hesitancy.

Methods: Multimodal lectures and workshops, incorporating visual, auditory, verbal, physical, and interpersonal learning styles, are scheduled during protected resident educational time (e.g. noon conferences, outpatient rotations, and clinic lectures). Lectures review the anti-vaccination movement and introduce the concept of emotional communication. VPD survivors and parents are invited as lecture guest speakers. Standardized patient workshops simulate encounters with vaccine-hesitant parents. Social media scavenger hunt familiarizes residents with anti-vaccination presence on social media. "Emotional Branding" contest invites residents to promote vaccination through positive feelings or life experiences associated with vaccination. PGY-2 residents watch a short documentary on vaccine hesitancy and complete writing exercises on personal attitudes toward vaccination during their Ambulatory Care rotation. Pre- and post-intervention surveys are based on the health belief model and use a combination of Likert-scale, multiple-choice, and fill-in questions. The surveys are evaluated for collective and individual changes in attitude, knowledge, and confidence. To track changes in social media use, residents are instructed to use pre-designated hashtags when sharing pro-vaccination on social media.

Results: Of 38 PL-1 residents surveyed, 26 (68%) responded. Only 17% feel confident in their ability to persuade vaccine-hesitant parents to accept vaccines. Most residents (76%) feel confident in their ability to discuss vaccine benefits, as reflected by a unanimous agreement that vaccines effectively protect a person from VPDs and that children are at risk for contracting VPDs. Only 31% feel confident in their ability to discuss vaccine side-effects. While 97% agree that educating parents in person about vaccines is important, only 31% are familiar with the language to use with vaccine hesitant parents. Preliminary data from social media workshops showed that of the 46 (50%) PL1-3 residents surveyed, 48% qualify as "frequent users," spending at least two hours per day on social media for at least three days per week. Only 50% of the frequent users are familiar with strategies to engage vaccine hesitant parents on social media. Seventy percent of the frequent users have never used social media to share vaccine messages. All participating residents agreed that the social media workshop was helpful in learning about social media engagement strategies. Eighty-six percent plan on sharing vaccine messages on social media after the workshops. Of the 29 residents that initially reported never sharing vaccine messages on social media, 24 (83%) report intention to start sharing vaccine messages on social media after the workshop.

Potential Impact: As many low-vaccination schools cluster in Los Angeles County, local pediatricians must be confident and effective in vaccine hesitancy counseling. A multimodal curriculum can increase parental vaccination acceptance rates by strengthening resident communication skills and social media proficiency.

References:

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Professional Identity Formation: A Teaching and Mentoring Model Using Reflective Practice

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Workshop Description: Medical schools and residency programs must use various methods for providing a strong foundation upon which learners can build their professional identities. Reflective writing, role modeling, and opportunities for feedback are among the ways educators can support professional identity formation. This interactive workshop will provide attendees with information and practical solutions to facilitate implementation of professional identity formation curricula and assessment at their institutions.

Rationale: Professional identity formation is one of the four pillars/goals for educating future physicians outlined in the 2010 Carnegie Foundation's Educating Physicians: A Call for Reform of Medical School and Residency. (1) Professional identity formation (PIF) has been defined as "the transformative journey through which one integrates the knowledge, skills, values, and behaviors of a competent, humanistic physician with one's own unique identity and core values." (2) During this developmental process students must expand their knowledge and skilled performance, deepen their commitment to the values of the profession, and adopt the habits of heart and mind consistent with being a physician. Medical schools and residency programs must use various methods for providing a strong foundation upon which students and residents can build their professional identities. Exposure to challenging patients (both simulated and real), personal reflection through writing, role modeling from mentors, facilitated debriefing, and opportunities for adequate feedback are among the key ways educators can support professional identity formation. This interactive workshop will provide attendees with information and practical solutions to facilitate implementation of professional identity formation curricula and assessment at their institutions.

Learner Outcome Objectives: By the conclusion of this presentation, participants will be able to:
1. Define professional identify formation and describe the rationale for its incorporation into medical training.
2. Describe the developmental processes that leads to professional identity formation.
3. Participate in a reflective practice activity to gain teaching/mentoring skills to support PIF.
4. Describe various modalities that can be used as assessment tools for professional identity formation.

Intended Participants: Medical school and residency program faculty, curriculum deans, program directors, medical students, and residents.

Methods: This workshop is designed to be interactive and engaging. The session will reflect a mix of group discussion, mini-didactic presentations and opportunities to learn and practice aspects of curriculum development and to consider assessment methods.

Activity Timeline:
00:00 – 00:05 Introduction of workshop facilitators and participants
00:05 – 00:20 Define professional identity formation and discuss key elements
00:20 – 00:30 Provide an overview of reflective practice as a tool to promote PIF
00:30 – 01:05 Reflective practice activity
01:05 – 01:20 Assessment strategies
01:20 – 01:30 Wrap up and discussion

Enlightened Leadership and High Functioning Teams: You Can Do This!

Ring, Jeffrey
Health Management Associates

Workshop Description: This workshop will review the characteristics of optimal team functioning and enlightened leadership. and will emphasize the precious role that leaders play in terms of enhanced clinical outcomes, patient experience of care, and team/practitioner wellness and vitality. Together, we will examine Lencioni's leadership model with a strong foundation of vulnerability-based trust, managing conflict and making commitments, followed by accountability and results.

Rationale: All educators are leaders, and leadership is not typically taught as part of medical education. As such, leaders often find themselves facing challenging team dilemmas and dynamics for which they are not prepared.

Learner Outcome Objectives: By the conclusion of this presentation, participants will:
1) Increase self-reflection on leadership style and strengths
2) Be able to articulate common leadership and team dysfunction and be better able to recognize these dynamics around them
3) Be better able to take steps to improve leadership, emotional intelligence and team functioning at their respective clinical agencies
4) Enhance familiarity with leadership resources for their own professional growth as well as facilitating such growth among colleagues.

Intended Participants: Anyone who is a member of a team or who leads a team.

Methods: This highly engaging and interactive workshop will explore several core concepts that comprise enlightened leadership including vulnerability-based trust, healthy conflict and accountability, according to the work of Patrick Lencioni. Through group discussion and video case review, participants will deepen their understanding of the basic skills that comprise successful leadership.

Activity Timeline:
15-minutes – Introductions to participants and topic
10-minutes – Leadership Self-Assessment and Debrief
25-minutes – Vulnerability-based trust including video review and discussion
15-minutes – Healthy Conflict including video review and self-assessment
20-minutes – Accountability including video review and discussion
5-minutes – Conclusions/Discussion

Improving Exclusive Breastfeeding Among Latino Mothers

Dadsetan, Malia
Adventist Health White Memorial

Idea: Our goal is to increase 6 month breastfeeding rates among clinic patients by 15% by 2020 by addressing barriers found within the latino community.

Need: Improving exclusive breastfeeding rates is important as it provides many benefits to both mother and baby. These include reduced risks of diabetes, obesity, and asthma among children and reduced risk of breast and ovarian cancer among women [1]. Currently multiple guidelines recommend exclusive breastfeeding for 6 months [2]. Unfortunately certain ethnic groups, such as the latino population, have decreased breastfeeding rates compared to other groups. In 2015 for example, 20.9% of latino mothers vs 29.5% caucasian mothers exclusively breastfed for 6 months in the United States [3]. Similar low breastfeeding rates are seen among our clinic patients. Our patients and faculty have expressed concerns regarding these low rates, which are due to multiple barriers. Our project aims to help identify and address these barriers in order to improve breastfeeding rates among our latino clinic patients.

Methods: The population includes female patients from Family Care Specialist (FCS) clinic that delivered children from 2019 to 2020. Our key outcome objective is to increase 6 month breastfeeding rates among FCS female patients by 15% by June 2020. In order to achieve this goal we will provide pre- and post-surveys inquiring about breastfeeding duration, as well as barriers, attitudes, and beliefs. Interventions will be based on current literature and tailored towards pre-survey responses. These interventions will include 1) a breastfeeding education booklet provided during each visit regarding myths and barriers of breastfeeding; 2) watching breastfeeding video at 36 weeks on an iPad in clinic; 3) providers discussing breastfeeding positions and strategies at 36 weeks; 4) providing lactation resources (numbers, programs) prior to hospital stay. Next, post-surveys will be administered to mothers at 6 months that delivered after interventions have been implemented. We will be using descriptive statistics to describe our findings.

Evaluation Plan: We will collect pre-surveys from our pregnant female patients from Family Care Specialist clinic at prenatal appointments at gestational age 28 weeks or greater during 08/2019 to 10/2019. We will then provide post-surveys at 6 months during 6 month well child visits. In order to gather the reaction of the study, an online survey will be sent to faculty and participants. By comparing the pre- and post-surveys we will assess what the target group learned as well as evaluate if their exclusive breastfeeding rates increased compared to previous cohorts.

Potential Impact: Overall, we hope to determine breastfeeding barriers and implement interventions that will improve the rates of exclusive breastfeeding among our clinic patients which in turn will help improve the health of both mother and child within our latino community.

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Improving Exclusive Breastfeeding Rates through Provider Education and Training

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Idea: Providing didactic sessions to healthcare providers about breastfeeding and instructing them about the best ways to motivate patients to do so may lead to increased rates of exclusive breastfeeding.

Need: There are many known benefits of exclusive breastfeeding, such as increased immunity, decreased SIDS, lower rates of obesity. However, exclusive breastfeeding rates are extremely low. In addition, medical education about breastfeeding and methods to improve rates are scarce, even amongst OBGYNs. The theory is that in order to improve these rates, it must start from healthcare providers first.

Methods: There will be 3-4 lecture series about the benefits of breastfeeding, the challenges for parents to sustain it, and the ways providers can motivate their patients. The lecture series will be given by a lactation specialist and a 3rd year family medicine resident.

Evaluation Plan: A survey before and after the lecture series will be given to assess the effectiveness of the lectures. In addition, exclusive breastfeeding rates will be measured prior to and after the intervention.

Potential Impact: The potential impact is that a new method to increase the breastfeeding rates can be standardized across other clinics and hospitals so a broader impact could be made.

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Integration of Fluoride Varnish Application into the WCC Visit in a Family Medicine Residency Clinic

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Adventist Health White Memorial Family Medicine Residency Program

Idea: Improve knowledge & skills of Family Medicine Residents in integrating fluoride varnish into well-child visits to improve dental health.

Need: Oral care is a largely underutilized health service in children from minority or lower socioeconomic backgrounds due to multiple barriers, including cost, convenience, and health literacy [1]. In the United States, the most common chronic disease affecting children is dental caries, which can impact patients' adult dentition as well. In the absence of an established relationship with a dentist, patients may overlook the opportunity for education to avert the development and progression of these caries. Additionally, dental caries has been shown to increase the risk for multiple costly comorbidities, including diabetes mellitus. Early prevention of dental caries in the pediatric population not only helps deter increased prevalence of many chronic diseases, but also limits school days missed due to dental procedures [2]. Professional application of topical fluoride varnish has been shown to reduce teeth decay by one-third, with absolute mean reductions in the number of affected tooth surfaces between 1-2.4. Further, this intervention is in line with the USPSTF 2014 guidelines on preventing dental caries in preschool children (Grade B) [3]. By providing Family Medicine resident education and skills, we can administer fluoride varnish early into well-child care visits and address the need and cost-effectiveness for integrating basic dental services and anticipatory guidance within the primary care setting.

Methods: The participants are the 28 Family Medicine residents in the Adventist Health White Memorial Family Medicine Residency in Los Angeles, California. The intervention is to 1) administer a needs assessment survey to all 28 residents and faculty; 2) Develop a training module to provide education to all 28 residents, all faculty and staff on children's dental health and its impact on health. 3) Administer a pretest and posttest to each resident & faculty; 4) Offer fluoride varnish application at WCC visit at least once a year; 5) Chart audits to assure that parents are given fluoride and dental health education.

Evaluation Plan: 1) Attendance will be taken during educational sessions; 2) Pretests and posttests will assess improvement of resident knowledge; 3)Post session surveys will assess resident attitudes, behavior, and confidence in educating parents about dental health and providing fluoride varnish application; 4) Fluoride varnish application rates and refusal rates will be tracked using the electronic medical record and will be compared to the national average.

Potential Impact: Our intervention will serve as a model for how Family Medicine residency practices can incorporate preventative dental services into their practice. The outcome evaluation from this intervention can also be used to establish optimal protocols for future office-based fluoride.

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Decreasing No Show Rate to Our Multidisciplinary Childhood Obesity Clinic

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Idea: To explore and overcome the motivations and challenges leading to a high no show rate by teenagers and their families to our childhood obesity clinic.

Need: Our Pediatrics clinic at Riverside University Health System offers a healthy nutrition and lifestyle clinic to combat pediatric obesity in our community. However, we have been running into a high rate of no shows, especially to the second half of the sessions. In this QI project, the goal is to have 50% of all patients return to at least 50% of all sessions offered. A secondary goal is to have an increase in number of patients completing the entire program.

Methods: Between June and September 2018, when a family would come to our obesity clinic, a survey was provided to both the child and the parent to identify factors that influence whether they would continue to come to our clinics. For no shows, patients and parents were also surveyed over the phone. In total, we received 26 parent (11 phone, 15 in person) and 29 patient (11 phone, 18 in person) surveys. The attendance to our obesity clinic sessions was recorded for the period between September 2018 and February 2019 and noted as our control. Then we implemented changes based on the survey results and recorded attendance for the period between March 2019 and August 2019. We then compare the rates of no shows for the post intervention period to the control.

Evaluation Plan: Using the results of our survey as well as thoughts from our obesity clinic providers, the following changes were made: Reduced length of program from eight to six week, curriculum was redone to be more interactive and engaging, added a health coach that would follow up with families after visits via text and email, added a welcome letter to better inform families of the program on enrollment, lowered minimum age of enrollment from 12 to 8 years old, and standardized all visits under one pediatrician instead of many. In the post intervention data, attendance rate for sessions one and two actually decreased from 50% to 34% and 71% to 50%, respectively. But sessions three to six all showed significant improvement (33% to 50%, 50% to 100%, 75% to 100%, and 50% to 100%, respectively) Our changes led to significant improvement in no show rates in the later sessions. We will continue to explore reasons for the new found high no show rates in our beginning sessions.

Potential Impact: We successfully decreased no show rates to our later sessions. Since these results, we have held a focus group with families to further discuss reasons for no shows. We are currently interpreting this subjective data and will plan more ways to make more changes in the near future.

An Online "Canvas Based Platform" Quality and Safety Course for Junior Residents in Anesthesiology

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University of Minnesota

Idea: Development of an on-line "canvas [1]" cloud-based platform course for first-year Anesthesiology Residents to learn fundamentals of Quality and safety

Need: ACGME requires residents to attain knowledge of quality and safety concepts during training [2]. Current training programs do not emphasize quality and safety training at the start of the residency due to immediate priorities of acquiring Anesthesia based clinical skills and knowledge. Residents need to become proficient in concepts and skills sets to solve quality and safety issues in their practice. A sound foundation of concepts in Quality and Safety will provide necessary tools to understand quality and safety issues, become active participants or lead on-going quality and safety programs within their department or institution. A web-based program offers flexibility and enables discussion forum type interactions between residents and faculty in a busy clinical practice with the packed didactic based curriculum.

Methods: The online "canvas platform" Quality and safety course is intended for first-year Anesthesiology residents (six) or other medical residents from different specialties. It is an abbreviated course adapted from another course developed by a faculty (Karen Baum) for a School of Public Health Executive Masters in Health Care Administration Course (MHA). The course contents and duration (now seven weeks) were altered to accommodate schedules and introductory teaching/training program in operating rooms for first-year Anesthesiology residents. It is designed to enable residents to learn concepts by executing the following tasks: read one related article, read a powerpoint presentation (which includes a transcript) and complete a weekly web-based assignment. Also, residents must participate in a preset topic in a discussion forum. They are required to write a paragraph or two on the subject and also respond to another residents note (within a preset timeframe), providing constructive feedback, personal insight, and perspective to their colleagues. A faculty oversees the discussion forums, provides feedback to the residents and evaluates their assignments. The program occurs during their first weeks of clinical exposure to Anesthesiology. They complete an "A3" form on a project of their choice (from a standardized list of departmental projects). We have an on-going periodic evaluation of active engagement of the residents after the course with current departmental Quality and Safety.

Evaluation Plan: Submission of assignments and timely participation in discussion forums between residents are monitored using the canvas engagement matrix. After completion of the course, residents are allowed to provide feedback in a meeting. The residents complete an online feedback survey, as well. (Initial reactions were positive). Periodic (quarterly) surveys will be sent out to residents to measure engagement in a program of their choice (chosen from a standardized list). Faculty leading quality and safety initiatives will evaluate residents who participate in their respective projects every quarter until the project is completed or if the resident completes residency.

Potential Impact: An ACGME required standardized comprehensive Quality and Safety Course using a cloud-based digital media (Canvas), for all medical residents will increase trainee skills and institutional multidisciplinary engagement in quality and safety initiatives.

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Understanding the Importance of Screening and Treating Sexual Transmitted Diseases in Our Community

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White Memorial Medical Center

Idea: Provide lectures to Family Medicine Residents designed to improve knowledge and confidence when discussing, screening, and treating STD's.

Need: Data released from the Centers for Disease Control and Prevention (CDC) reveals that STD rates continue to climb in the US., with nearly 2.3 million cases reported to the CDC each year. These numbers are disproportionally higher in low income communities, where conversations about sex is still in many ways lacking due to the taboo nature of this topic. Therefore, as family medicine residents providing care in the predominantly underserved community of East Los Angles, it can be very challenging to initiate conversations around sex with our patients. With the current rise in sexual transmitted disease especially in low income communities, it is imperative that our family medicine residents take measures to ensure that all of our patients are screened and treated appropriately. We hope to accomplish this by providing integrative lectures to address initiating such conversations in addition to screening and treatment.

Methods: The intervention will focus on the 23 family medicine residents in our program and take place over 8-months. The intervention will include the following: 1) Three didactic teaching: In these lectures we will discuss how to initiate conversations around sex with our patients and use CDC as our main framework for discussing screening and treatment for STD's (chlamydia, gonorrhea, syphilis, HIV). Our goal is to increase overall confidence and knowledge in our residence by at least 30% We will be able to measure this by providing pre-test and post-tests. 2) Chart checking for STD's screening: Our goal is to increase screenings for STD's by at least 20%. 3) Chart checking for documentation on sexual activity: We will chart check a total of 100 charts to investigate if conversations around sexual activity is being documented. Our goal is to increase this by 20% We hope to facilitate our discussion by inviting some our HIV positive patients to join our lectures so that they can share their perspective. 4) Continuity clinic precepting: Every month we will encourage our senior chiefs to discuss the importance of taking a thorough sexual history as they precept their first -year family residents.

Evaluation Plan: We will plan to chart check 4-months before and 4-months after lectures are given in order to evaluate if screening for STD's has increased by at least 20% We will conduct pre and post-test during every lecture to assess if overall confidence and knowledge has improved among residence. We also hope to increase these by at least 20% At the end of our study we will send out a survey so that residents can voice how our lectures can improve for next year.

Potential Impact: As providers, we may be the only individuals that can provide education and screening for many of our patients. It is therefore important that residence have the proper training to discuss, educate, and treat STDs. In doing so, we can reduce transmission of these preventable diseases.

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Improving Provider Notifications of Patient Deaths in the Hematology-Oncology Department

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Idea: Implement a notification system for patient deaths in the Hematology-Oncology Department to improve awareness, education, and well-being of staff.

Need: Palliative and end-of-life care are crucial components of the treatment plan for childhood cancer. Previous studies have indicated that timely notification of change in patient status, including death, is crucial to providing optimal care [1]. In addition, the feedback of patient outcomes is integral to comprehensive education for both trainees and lifelong learners in the healthcare field. Moreover, clear communication in palliative care settings and after pediatric patient death has been shown to improve provider well-being and reduce burnout [2,3]. Currently, at CHLA, the death notification system for patients cared for by Hematology-Oncology providers is not standardized. Various providers will periodically send out a eulogy of a patient via an existing, incomplete, and static listserv. If this is not disseminated, patient death notification occurs by word of mouth or by whiteboards in nursing stations. Unfortunately, many key providers are not included on this listserv or able to receive this news, such as those primarily in an outpatient setting or who work in the pediatric intensive care unit. Faculty, trainees, and staff need a standardized way in which they can be notified of a patient's death. A standardized death notification system will allow for rapid updating of providers, which will contribute to learning, patient care, and provider well-being.

Methods: The involved population will be Hematology-Oncology faculty, fellows, nurses, social workers, care managers as well as PICU staff and pediatric residents. The intervention will be done over a 6 month period and will take place over email. A standardized process for notification of patient death will be implemented across the Hematology-Oncology department. The outcomes to be assessed are changes in timeliness of notifications pre- and post- intervention, and the impact this has on staff, including impressions of patient care, their own education, and well-being. The intervention will be implementation of a standardized email template to notify the listserv of a patient's death. This email will be sent by the patient's primary hematologic or oncologic team within 48 hours of the event. This will be done via a new listserv with all Hematology-Oncology faculty, fellows, nurses, care managers, and social workers. Sign-up to be included in this listserv will also available to any healthcare professional at CHLA. For late or absent emails, or those that do not include the minimum template information, providers will be asked to identify the most important barrier to adherence to guidelines. These guidelines will be clearly delineated and distributed to Hematology-Oncology staff in writing via email and paper protocol, and in presentation at a Senior Staff meeting.

Evaluation Plan: We will compare the timeliness and consistency of death notifications before and after standardization is implemented, including time from death to notification and percentage of deaths that result in any email communications regarding that patient's outcome. We will also compare listserv composition, including provider type and department between the current list and the new one. Pre- and post-intervention surveys will measure participants' impressions of end-of-life care, self-assessment of comprehensive educational experience, and perception of distress. This survey will also assess participants' satisfaction with the intervention.

Potential Impact: Improving the quality and consistency of death notifications has the potential to improve patient care, increase awareness and advance education by providing feedback on patient outcomes, and enhance provider well-being to reduce burnout.

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Recess On The Wards: Improving Pediatric Outcomes Through Exercise

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Emanate Health

Idea: Integrating wellness and exercise in a Pediatric inpatient exercise intervention Adding value to the healthcare service.

Need: Over 70% of pediatric hospitalizations occur at community hospitals, with 20% lasting longer than 4 days. During admission, children are exposed to a variety of events that produce a tremendous amount of stress. In addition, children adhere to sedentary settings in patient rooms. Their illnesses, as well as the course of their hospitalization, are both potentially traumatic, anxiety-inducing, and can lead to transient or long-term behavioral and psychological challenges. At Queen of the Valley Hospital, there is a designated space for didactic activities during admission, such as painting, reading, and videogames. However, there is currently a lack of active games and events, and children can spend their entire stay while exerting very little energy. There are almost no physical activities to meet daily exercise requirements during admission, to the ultimate detriment to our pediatric patients. Inpatient exercise programs have reported improvements in pain scores, increased appetites and energy levels. We believe that by enhancing physical activity during the admission to the pediatric floor, we will substantially improve the health of our local pediatric populations, educate children and families about the mental and physical benefits of exercise, and set them up for continued success long after they have been discharged from our hospital. We also believe this will improve patient-related outcomes, leading to improved revenue, given the current value-based healthcare concept.

Methods: The proposed study will be implemented at Emanate Health Queen of the Valley Hospital, in the inpatient pediatrics unit. Patients between the ages of 4-19 will be led through a supervised, 60 minute activity that follows the Physical Activity Guidelines for School-Aged Children and Adolescents. Examples of activities include: pedalling tricycles around designated tracks for younger children, and using a stationary bike or treadmill with older patients, guided walks around the premises, and group aerobic activities like handball, hopscotch, and yoga. During times with less patient volumes, empty rooms can be converted into space for these activities. Parents are welcome to join their children during these events, and encouraged to continue building healthy habits such as these after discharge. Patients will also enjoy the benefits of interacting with other children during these activities. Patients with decreased mobility, or restricted access due to infection can perform activities in their rooms or according to their respective capacities. The rotating family medicine resident will oversee these activities and assist with the planning.

Evaluation Plan: Prior to discharge, patients will be given a survey based on the Patient-Reported Outcomes Measurement Information System (PROMIS), patient satisfaction,medical outcome and wellness scores. Outcomes will be measured and will be compared to the ones prior to intervention.

Potential Impact: Enhancing Physical activity on wards may improve inpatient experience, decrease pain medication requirements, anxiety and depression of patients during admission and admission time. Improvements in outcomes can generate revenue that will be invested in the devices adapting spaces for activities.

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It's About Time: Improving Compliance in Tte One-Hour Sepsis Bundle

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Problem Statement: Delays in sepsis resuscitation are life-threatening. We instituted a modified EMR alert triggering a nursing protocol, preventing delays in care.

Rationale: Sepsis and septic shock are life-threatening illnesses that affect more than 20 million patients. Early recognition of sepsis is vital for reducing morbidity and mortality as each hour of delay in antibiotics increases mortality by 8% [1]. Recent Surviving Sepsis Campaign guidelines emphasize the importance of combining the 3-hour and 6-hour bundle into a single 1-hour bundle for early recognition and prompt resuscitation [2]. To improve the speed of resuscitation and compliance in the 1-hour bundle, we implemented a simplified computerized alert system triggering a nursing driven sepsis protocol aimed at timely intervention.

Methods: Our study was limited to the emergency department. This project has been a collaborative effort between the emergency department, the internal medicine department, nursing staff, pharmacy, and our IT department. Data collection is currently ongoing and will end in April 2020. A modified algorithm was built into our existing electronic medical record (EMR) system firing a SIRS alert if 3 of the following criteria were met: heart rate >90, respiratory rate >20, temperature < 36C or >38.3C, or WBC <4k or >12.1k. A SEPSIS alert would fire if 2 SIRS criteria plus 1 of the following signs of organ dysfunction were met: lactate ≥2.1 mmol/L, SBP <90 mmHg or mean arterial pressure <65 mmHg, bilirubin >2.1 mg/dL, platelet count <100,000, INR >1.5 (not on Coumadin), or creatinine ≥2 mg/dL without known chronic kidney disease (3). Once an alert was fired and infection was suspected, nursing staff would be prompted to draw a lactic acid level, initiate a 500ml crystalloid bolus, collect blood cultures and notify provider. These nursing interventions could be initiated before the evaluation of an ED provider. Pediatric (<age 18), trauma, or obstetric patients were excluded. We analyzed data from April through July 2019 for all the SIRS/Sepsis alerts. Full compliance of the 1-hour sepsis bundle meant obtaining blood cultures, drawing a lactate level, and initiating antibiotics and intravenous fluids within 1 hour of the EMR trigger. Monthly comparisons were analyzed using a 2-sample t-Test.

Results: Of the 995 alerts, 317 patients met the inclusion criteria. Compliance of the sepsis bundle at 1 hour was evaluated by comparing alerts from April through July. In April, a 1-hour sepsis bundle was met in 25.49% of the patients. In July, the 1- hour sepsis bundle was met in 49.06% of the patients. This represents a compliance improvement of 23.57%. (P=0.005). Since the implementation of the EMR trigger and nursing sepsis protocol, we have improved compliance in 1-hour sepsis bundle at all categories. From April to July, administration time of antibiotics has been reduced by 59 minutes (P=0.013), administration time of IVF by 64 minutes in (P=0.028) and blood culture collection by 28 minutes (P=0.038).

Potential Impact: Our hospital compliance sepsis bundle measures have steadily improved each month since the introduction of EMR alert and reinforcement of nursing driven protocols. Future direction for our project will also focus on effects on length of stay, shock progression, and overall morbidity/mortality.

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Changing County's Catheter Culture

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Problem Statement: CAUTI (catheter associated urinary tract infection) is one of the most common types of health-care associated infections.

Rationale: Our objective is to decrease the incidence of CAUTI at John H. Stroger, Jr. Hospital of Cook County to minimize negative implications for our patients and reduce cost for our facility. Along with the Quality and Improvement committee, we propose an algorithm detailing foley catheter placement guidelines, including correct placement, management and need for exchange in order to reduce risk of CAUTI rates. This algorithm has been published on our health system web site and was made available to all health care staff at our institution. An educational session was also provided to all participants and knowledge of proper foley management was assessed via a 5 part questionnaire both pre/post the educational foley in service.

Methods: We propose an algorithm detailing foley catheter guidelines, including correct placement, management and need for exchange in order to reduce unnecessary catheters as well as reduce risk of CAUTI rates made available to the entire health care system. Additionally, we conducted a foley catheter "In-Service" (approx 30 minutes) on the correct management of foley catheters in any hospital care setting. We then administered a voluntary, non-validated 5 question survey assessing the general knowledge of our health care staff regarding proper foley catheter management. Each participant was given the survey both before and after the education session. Participants consisted of medicine residents, surgical residents, nursing staff, emergency room technicians and medical assistants. We then compared results of participant knowledge before and after the teaching session.

Results: 100 respondents participated in our foley catheter in-service, and each participant completed both the pre and post foley catheter assessment. When comparing results from before and after the education session was held, 70% participants incorrectly answered what the correct indications were for foley placement was; however, after the education session given, nearly all participants answered correctly regarding foley catheter indications. Furthermore, 60% more of participants correctly identified methods of reducing risk of CAUTI when placing a foley catheter. Additionally, majority of participants were able to correctly identify proper foley sizes and types given the patient presentation at time of the emergency room visit.

Potential Impact: Through our foley catheter algorithm and our education session, we were able to vastly improve the knowledge of health care staff regarding proper foley management in order to reduce CAUTI's. Furthermore, this can be essentially applied to any hospital setting with possible similar outcomes.

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Illuminating Quality Metrics' Utility in GME to Link Learning with Patient Care Outcomes

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Problem Statement: Quality measures in Graduate Medical Education (GME) are understudied despite calls for better linkage of resident competencies with patient outcomes.

Rationale: The holy grail linking patient outcomes and educational programs remains elusive. GME trainees significantly contribute to healthcare systems, but their care quality remains understudied [1]. Publicly-reported quality measures are used widely by payers, health systems, and the public to assess physicians and their system-level performance but these measures' role on patients cared for by residents is not well understood [2]. In tandem, while competency-based medical education (CBME) prepares residents for unsupervised practice, current CBME assessments depend on faculty-based judgments and high-stakes licensing exams that inadequately assess all core competences effectively and equitably [3]. Thus residents do not have adequate feedback on providing high quality care and improving systems-level performance. This study explores the feasibility and reliability with publicly reported ambulatory care quality data to assess resident competency and the quality of care provided to patients.

Methods: We examined Healthcare Effectiveness Data and Information Set (HEDIS) measures between 2014-2018 for 566 residents in 8 Accreditation Council for GME (ACGME)-accredited Family Medicine and Internal Medicine programs across Kaiser Permanente Southern California (KPSCAL). Administrative data to calculate HEDIS performance on practicing physicians are routinely used for quality improvement. In 2014, resident-level HEDIS performance was added systematically given residents' assignment of patient panels similar to KPSCAL physicians. Residents' patient census were obtained for HEDIS measures under the National Committee for Quality Assurance (NCQA) domains of Effectiveness of Care and Utilization. We compared residents' HEDIS rates against KPSCAL physicians' performance at the same medical center and publicly available NCQA data. HEDIS measure rates are defined as criteria met (numerator) over all eligible patients for that measure assigned to a resident (denominator). Mean and distribution of rates were compared over each postgraduate year (PGY), and against the program's medical center and national NCQA performance. The reliability of available HEDIS rates for each resident and program were assessed. We calculated patient sample sizes to achieve reliable levels per psychometric standards. Differences between required sample sizes versus actual patient counts were calculated by estimating the intra-unit correlation reliability from mean resident rates minus required sample sizes.

Results: We found available HEDIS measures varied widely at the individual resident level (12.7% to 97.2%) and program-level (75.0% to 100.0%). The mean (SD) number of patients meeting HEDIS criteria for residents ranged from 1.7 (1.1) to 52.9 (44.9) patients, with differences noted across programs. Distribution of residents' rates generally narrowed across training years, with outliers reported for all PGY levels. When comparing the most available HEDIS measure, Colorectal Cancer Screening rates, physicians and the majority of PGY3s outperformed the mean for national NCQA Commercial Plans. Reliability alpha estimates and the minimum number of required patients depended on whether we analyzed at the resident or program-level. For residents, the minimum number of patients were met by approximately one-half of the 12 HEDIS measures. For measures with the largest deficiencies in patient sample sizes, most were related to intermediate patient outcomes, including providing comprehensive diabetic care and controlling high blood pressure. At the program-level, reliability estimates were met by all the HEDIS measures, with the exception of controlling high blood pressure, which was only met for one reporting year.

Potential Impact: Assessing GME performance on publicly-reported quality measures demonstrated utility and reliability. Analyzing such data garners learning and improvement to expand routine

assessment methods, and for programs across U.S. health plans to understand their health system's performance.

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Wireless Computer Tablet Technology to Improve Diabetes Knowledge

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Idea: A technology-focused solution to increase patient health literacy and satisfaction in a safety-net clinic through the use of computer tablets.

Need: Many patients are never able to obtain control of their chronic condition(s). Research has demonstrated that Health information technology (HIT) in the clinical setting leads to stronger patient engagement and improved overall health literacy. [1,2,3] Moreover, recent health care reforms in the United States, including the Affordable Care Act and the Health Information Technology for Economic and Clinical Health Act, mandate that health organizations use technology to promote patients' health literacy. At the LAC+USC Medicine+Pediatrics Clinic, there is ample time to disseminate educational materials to patients waiting to visit their primary care physician and during the time in which residents are presenting to attending physicians. In this context, we plan to utilize handheld computer tablets and health education videos to improve health literacy and increase overall patient satisfaction.

Methods: The intervention will focus on adults 30 to 65 years of age with Type 2 Diabetes Mellitus (T2DM) within the LAC+USC Medicine+Pediatrics Clinic and will take place between January 1, 2020 and November 1, 2020. One handheld computer tablet will be placed in each resident's exam room for patient utilization. Each tablet will be uploaded with a short diabetes educational video in both English and Spanish, the two most common languages spoken by patients in the clinic. Each patient participating will be given a short diabetes knowledge test and then instructed to watch the diabetes educational video. The diabetes video will cover important information regarding blood glucose, A1c, appropriate dietary modifications, complications of diabetes, and regular screenings for patient with diabetes. The videos will also encourage patients to direct all questions they may have about their condition to their healthcare provider. All patients, regardless of whether they are within the cohort being studied, will have access to the computer tablets and will be guided to use them. Eventually, this project may be expanded to other clinics within the LAC+USC Medical Center outpatient setting.

Evaluation Plan: To evaluate the project's efficacy at increasing patient knowledge of T2DM, short diabetes knowledge tests will be administered to patients prior to utilization of the educational videos on the tablets. The knowledge tests and questionnaires will then be administered to the same patient cohort at designated intervals throughout the course of the project to evaluate improvement in diabetes knowledge. At a return visit, patients will complete the same knowledge test. Initial pre-tablet utilization results will be compared to post-tablet utilization results to determine if any improvement in diabetes knowledge exists. Additionally, balancing measures including blood pressure, BMI, and A1c will be obtained and matched with the patient's score on the diabetes knowledge test. Conclusions about changes in knowledge will be drawn.

Potential Impact: The utilization of computer tablets in the Medicine+Pediatrics Clinic may lead to improved health outcomes, and if successful, can be implemented in other clinics throughout the LAC+USC Medical Center outpatient setting.

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A Multidisciplinary Code Simulation Curriculum Utilizing a Unique Standardized Assessment Tool

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Idea: Utilize the American Board of Pediatrics Entrustable Professional Activities to design and assess the efficacy of a simulation curriculum.

Need: The American Board of Pediatrics has created seventeen Entrustable Professional Activities (EPAs) in which pediatricians must demonstrate competency.1 Residency training programs are designed to measure successful achievement of competency through performance in a multitude of clinical settings. However, pediatric cardiopulmonary resuscitation events are rare and as a result outcomes surrounding these events are poor even when they occur within a hospital. Due to lack of exposure and unfamiliarity with these events, research shows that teams need significant improvement in skills including: response times, role identification, communication, procedural skills, and adherence to standard of care guidelines.2 The rare nature of these critical events, makes it difficult to assess the competency of a resident's ability to manage patients with acute diagnoses (EPA 4), resuscitate and stabilize patients (EPA 10), lead a team during a resuscitation event (EPA 15), facilitate handoffs following a resuscitation event (EPA 16), and demonstrate necessary procedural skills during a resuscitation (EPA 17). For this reason, a simulation curriculum is needed to expose residents to scenarios in which they can demonstrate these skills. Prior studies have shown various results regarding the impact of simulation curricula on provider confidence, quality of care provided, and patient outcomes.3 However, none have utilized EPAs to design or assess the efficacy of a simulation curriculum.

Methods: This study is currently in progress at the Pediatric Residency Training Program at Children's Hospital Los Angeles, and the study population is the program's 100 current pediatric residents. Collaborators from the Division of Hospital Medicine, Emergency Department, Neonatal Intensive Care Unit, Pediatric Intensive Care Unit, and Pediatric Residency Program identified current simulation opportunities offered to pediatric residents. Additionally, each division formulated a list of unique resuscitation scenarios with diagnoses and conditions specific to the type of patients cared for by that department, mapped them to applicable EPAs (4, 10, 15, 16, and/or 17) and committed to offering these simulations to residents during their required rotations. A graded rubric was created for each EPA using a scale from 1-5 (1 = "Resident cannot perform without assistance" and 5 = "Resident can act as instructor or supervisor"). After each simulation scenario, the resident and the instructor fill out this rubric for any EPA assessed by the simulation scenario, and these assessments are compiled for analysis. Additionally, due to variability of resident schedules and inability to guarantee that each resident will participate in every simulation environment, a form accessible via QR code was developed to track residents' progress through the simulation curriculum. The resident fills out this form after each simulation to track his/her cumulative exposure to elements of the curriculum.

Evaluation Plan: The goal of this curriculum is to increase the exposure of pediatric residents to simulated resuscitation scenarios as a means of practicing and demonstrating competency in Entrustable Professional Activities related to critical resuscitation events. A resident's progress through this longitudinal, multidisciplinary curriculum is tracked and creates a dose-dependent exposure to resuscitative events. Self-reported and instructor-reported EPA rubric assessments will then be utilized to track the resident's progress toward competency in each EPA according their dose-dependent exposure to the simulation curriculum. Ultimately, EPA-based competency demonstrated in simulated resuscitation scenarios will be assessed for correlation to performance in real resuscitation events.

Potential Impact: Since code events are rare in pediatric patients, there is no current metric to assess a resident's competency to manage, resuscitate, lead, communicate handoffs, and perform procedural skills necessary during these events. This curriculum provides an environment to measure these competencies.

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Establishing a Culture of Formative Feedback in a Family Medicine Residency Program

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Idea: Establishing a field note system for giving formative assessment in a family medicine residency program through resident and faculty development.

Need: Feedback and assessment helps the learner see the gap between their performance and the standard [1], provides information to trainees to help them improve their performance and steers learning towards desired outcomes [1,2]. Areas identified as needing more work in workplace-based assessment include development of strategies to ensure that workplace based assessments are successful and sustainable and strategies for implementation of formative assessment in the workplace. Some barriers in implementing an effective system include both resident and faculty understanding of the role of feedback, resistance to 'negative' feedback, non-specific feedback, culture of the program and institution regarding feedback and time needed to give feedback and for reflection on feedback [1,2,3]. It has been shown that a strong intention to complete assessments does not translate into a better completion rate [3]. The type and delivery of feedback also influences its effectiveness and can have a negative impact on the learner [2]. Learners also have difficulty with accepting negative feedback or low ratings and feel that assessments vary between faculty [1,3]. Therefore, interventions that target the beliefs of the users by addressing advantages and disadvantages of the system and setting clear expectations should be used prior to implementation [3] and care should be taken to avoid a feedback/assessment system that appears oriented towards detecting and punishing incompetent individuals [1].

Methods: New Innovations, a web-based residency management system will be used as the electronic feedback system. The Canadian Field Notes model will be use to document formative feedback in the ACGME milestones of medical knowledge, patient care and systems-based practice. Residents will be required to solicit one evaluation per week from faculty on their performance in the outpatient continuity clinic. The intervention will consist of resident and faculty development addressing perceived barriers on feedback and the use of the electronic feedback system. The strategy to promote successful implementation will be through training sessions involving all ten residency program faculty and twenty-seven family medicine residents. There will be two initial training sessions, each lasting one hour. The first training session will focus on the types and benefits of feedback. It will also address the barriers of time, understanding milestones, and wording of feedback. The second session will be hands-on training on use of the system. Participants will use the system to create feedback after watching videos of patient presentations. In small groups they will share their feedback and reflect on the process. Three months after implementation of the feedback system, a third educational session will be developed based on feedback from residents and faculty about concerns and/or barriers to use of the system.

Evaluation Plan: The success of this intervention will be evaluated with a combination of reaction surveys, usage data and focus group interview. Reaction surveys will be given pre and post development sessions to assess understanding of the role of feedback and system use. At 6 months and 12 months after implementation of the feedback system surveys will be administered to assess satisfaction of the feedback process and adoption of and use of the system. Use of the system will also be assessed by usage rates via report from New Innovations. Resident and faculty focus groups will be conducted at 2 months after implementation of the system to identify feedback system strengths and concerns.

Potential Impact: The gap that this idea will address is the implementation of a formative assessment system in the outpatient continuity clinic setting. It will show that taking the time to train users improves adherence to the process. Other residency programs can use this model to enhance their feedback culture.

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Medical Student Chiefs: A Novel Position in Undergraduate Medial Education

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Idea: Medical student chiefs are a novel role for senior student leaders to formally bring peer education to the undergraduate medical education setting.

Need: In residency, chief residents serve unique roles that simultaneously represent both graduate medical education and departmental faculty. While most residency programs have chief residents, a similar medical student chief role, to act as a liaison between undergraduate medical education (UME) and medical school faculty, is virtually unheard of. A search of peer-reviewed journals did not reveal any publications of similar, specialty-specific, senior medical students leading formal peer education. At most medical schools, junior students receive the majority of their teaching from residents, fellows, and attendings. At UNC, we have established Pediatric Medical Student Chiefs (PMSC) who, due to their recent experiences as medical students, are inherently approachable and uniquely positioned for near-peer mentorship of pre-clinical, clerkship, and visiting students. Additionally, chiefs view curriculum through always fresh lenses, which fosters improvement in educational offerings. Selected chiefs build their own leadership skills, receive mentorship in educational theory and practice, participate in didactics, mentoring, scholarship, and much more. Guided by appropriate faculty supervision, chiefs also significantly extend the capabilities of educational leadership. With students who are passionate about teaching, leadership, and mentorship, the PMSC is an innovative position that provides a novel example for near-peer education in UME.

Methods: The PMSC position was created in the 2018-2019 school year. Three to four students are selected by educational leadership annually through a competitive application. In the inaugural year, chiefs accomplished multiple goals in pioneering a formal peer education curriculum at UNC and were anecdotally very well received by students and UME leadership. New chiefs continue past programs and are given flexibility to pursue novel educational projects in pediatrics at the school of medicine. The PMSC position is integrated into the clerkship curriculum through formal education sessions held during every clerkship rotation. Chief-led sessions include bedside teaching during orientation, daily case-based study questions distributed to students through social media, and a case conference each rotation. The chiefs become engrained in the UME community as leaders and mentors by also leading the student-run free Well Child Clinic, updating guides for clerkship students and residency applicants, advising pre-clinical students interested in pediatrics, welcoming visiting students to campus, and also creating a centralized resource of pediatric research opportunities. For their efforts, in addition to the honor of being selected, chiefs are able to earn formal course credit, serving as a medical education elective. They also receive mentorship with each activity to grow them as leaders. Annually, chiefs have presented their work to various educational conferences at UNC.

Evaluation Plan: The PMSC role impacts many different groups, including clerkship students, pre-clinical students, educational leadership, and even the chiefs themselves. Our first step in evaluation will be to survey these groups to qualitatively analyze the most valuable features of the experience. Additionally, this data will assist faculty in understanding best practices when working with future student chiefs. Building on what we learned from the inaugural year, we will identify a survey that assesses the self-reported comfort levels of our student chiefs for a number of metrics. Areas covered will include leadership, curriculum development, educational scholarship, and peer mentorship. We will prospectively analyze this data to address the impact of this role in both career and professional development. Finally, we hope to see this role replicated among other departments at the school of medicine, if not across the country. Evidence of its dissemination will be an additional measure of success.

Potential Impact: A student chief role is an innovative way for senior students to contribute to the education of peers while developing their own teaching skills. This program is easily replicated at other medical schools and has the potential to substantially improve curriculum offerings in UME.

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1) Our literature review did not reveal any publications of similar, specialty-specific, senior medical students leading formal peer education.

Medical Student Journal Watch: a Virtual "Journal Club" for the Pre-Clerkship Curriculum

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Idea: A weekly online forum of articles relating to pre-clerkship curriculum topics and medical humanities essays may promote professional reading habits.

Need: Physicians need to keep up-to-date on the medical literature. If the habit of reading for self-education can be inculcated in medical students in a non-coercive fashion, it should serve them well in the future. Pre-clerkship reading assignments in medical school are traditionally from textbooks, providing little reference to recent publications or current clinical practice. Most references to recent developments in the pre-clerkship curriculum occur with basic science research, for which the clinical relevance is not established and which will not be assessed on national standardized examinations (thereby reducing student interest). Many medical students feel that the pre-clerkship curriculum is far removed from current clinical care, and they do not clearly perceive how regularly reading the medical literature can serve their needs and interests. Journal Club (JC) promotes reading and discussion of the medical literature, and is widely employed in graduate medical education [1]. Some JC models have been implemented in undergraduate medical education [2,3], although they focus primarily on assessing the evidence of research and clinical trials. However, based on the articles chosen to distribute, a JC-like format can be used instead to demonstrate the immediate relevance of the current medical literature to students in the pre-clerkship years. Medical School Journal Watch is a faculty-curated, weekly online module promoting the habit of regular medical literature reading.

Methods: UC Irvine uses Canvas (Instructure; Salt Lake City UT) as the electronic student-interface with curricular content. Medical students were enrolled into an extracurricular pseudo-course called "Medical School Journal Watch" (MSJW). During orientation for 1st- and 2nd-year students, the author informed students of the existence and intent of MSJW and invited them to access content. Students were informed they had no requirement to use MSJW. MSJW was updated weekly for 96 weeks over 3 successive academic years - 2015/16 to 2017/18. The author created weekly lists of 5 articles from the most recent issues of high-impact general medical journals, most often: New England Journal of Medicine, Journal of the American Medical Association, Lancet, and Morbidity & Mortality Weekly Report. Review articles and original research were chosen based on relevance to topics taught concurrently or near-concurrently in the MS1 and MS2 courses. For example, if Microbiology covered Mycobacterium tuberculosis, an article about multidrug-resistant TB might be chosen. Other common article-types were essays about the experience of being a physician and visual diagnosis cases. Each week's articles were posted on a Canvas page, and included brief article descriptions, which courses and topics the article applied to, and links to PDF article copies for direct student download.

Evaluation Plan: Students who were more frequent users of MSJW content were polled regarding their use, which features were appealing, and how it could be improved. Since student use of MSJW was voluntary, actual use and poll response rates were very low, limiting objective evaluation of the project's effectiveness. Comments included: •an easy way for me to keep abreast of some of the literature being produced outside the bubble of the pre-clinical courses. •a good platform to try to encourage med students to read more articles. •Mostly I just got a better sense of what practicing docs might be reading and what is happening in the clinically-relevant research world, as well as keeping up on techniques of how to read and critique papers effectively. The topics of MSJW articles were tracked. The most common topics, perhaps reflecting biases in the faculty-curator, were: •Healthcare Policy •Medical Microbiology •Doctor-Patient Communication •Medical Pharmacology.

Potential Impact: Medical School Journal Watch is a journal club-like method designed for ease of student use, to promote regular reading of the current medical literature in a way that is palatable and can be integrated into their other studies.

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Creating an Education Innovation Community of Practice for Impact and Influence

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Idea: To create an education innovation Community of Practice.

Need: Innovation in health science education has the potential to translate scalable education interventions into simulated or real-world settings to transform science, health, and/or healthcare delivery. However, education innovation requires intentional collaboration, support, and development across broad and diverse stakeholders. To cultivate innovation within our organization, we are building a Community of Practice (CoP) using the underlying principles of CoP design as well as our own model for innovation. Innovation is not only a mindset, but a habit of practice that requires deliberate coaching and skills development. We offer a space for innovators to actualize the potential for impact in health sciences education; engage in strategic collaboration across the medical education continuum; and embrace intelligent risk-taking. Our CoP is unique, diverse, and inclusive—focusing on MD and PhD education (not inventions) and including faculty, staff, medical and graduate students and residents. Our activities are aligned with our seven innovation competencies (creativity, critical thinking, initiative, intellectual curiosity, intelligent risk-taking, teamwork, visioning), which were developed in collaboration with our community.

Methods: Our CoP aims to cultivate, support, promote, and achieve innovation by connecting people with regular engagement and enrichment activities to influence our institutional culture. The innovation development program is based on feedback from a needs assessment and culture survey administered to members of our growing CoP. This program is open to everyone at our institution. It consists of engagement activities that connect innovators seeking to engage in creative dialogue as well as enrichment activities that generate new knowledge and develop skills for innovation experimentation and implementation. The development program offers exposure to key concepts in innovation as well as the opportunity to workshop ideas, crowdsource feedback for input, and share progress with the community. Regular attendance is intended to foster the development of our innovation competencies through a self-paced, self-directed, and self-assessed approach.

Evaluation Plan: We will iteratively evaluate the degree to which we are making progress towards developing a CoP based on the following criteria: People: connect people, promote strategic collaboration across the medical education continuum, facilitate development of innovation competency, help aspiring innovators develop and implement an idea, foster intelligent risk-taking; Activities: teach fundamental principles of innovation, provide support for innovation; and Culture: explore ways to deconstruct barriers to implementing innovation, actualize the potential of impact in health sciences education, improve awareness of other innovation activities within Michigan Medicine.

Potential Impact: Education needs new ideas that will shatter expectations of the status quo and create meaningful impact, we have designed a model for developing a CoP around innovation in health sciences education to serve students, teachers, and the larger needs of society.

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3D Printing Cardiogenesis and Suture Project

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Idea: Personalized cardiovascular medicine lacks a complementary laboratory curriculum that addresses the cultivation of stem cells into 3D cell culture.

Need: Global cardiovascular mortality rates have skyrocketed as an aging population grows, however, age-related loss of cardiomyocytes is potentially reversible with innovative cell therapies. Over the past eight years, our lab has developed a powerful teaching model that provides meaningful and realistic exploration of cardiac surgery techniques (i.e. suture and knot tying), cardiac cell regeneration, and clinical stem cell application. Studies support the notion that entry level surgeons can benefit from practicing their surgical skills on simplified bench models, suggesting that low-fidelity models are sufficient for motor learning to occur. Our model compliments wire-handling skills required to manipulate devices placed in the heart during cardiac surgery. It also aims to promote open outcome-based experiments and develop six-week project goals that consistently lead to innovation in a specific sequence of pedagogy. Interest in stem-cell-mediated myocardial repair has grown substantially and there is rapidly accumulating clinical and preclinical data supporting this approach. Our project aims to model a contemporary scenario wherein cardiac tissue derived from the patient is grown in laboratory tissue culture, modified genetically and returned to the patient as therapy. This procedure is currently in clinical practice at major medical centers nationally and is at the forefront of cardiovascular disease research.

Methods: Module 1: Personalized medicine, tissue regeneration, and advanced cell culture sterile techniques are discussed. P19CL6 stem cells and materials to maintain cell cultures are provided to wake up freezer stocks. These cells are monitored using inverted microscopes, digital cameras, HD monitors and imaging software. Module 2: Instruction in sterile laboratory techniques initiates with peer mentors. Basic controls for cardiac differentiation are established using dimethyl sulfoxide (DMSO) and maintained in fibrin matrices with gelatin. At 14 days, contractile behavior ("beating") and pacemaker structures predictably appear. Module 3: Trends in manipulating electrically responsive tissues, novel biomaterials, and cell delivery form the basis of a literature search. Students are given access to CAD software and a 3D printer, various suture materials, fibrin components and differentiation factors. Students have typically engineered novel ways to enhance contractile behavior in this module. Module 4: Students design projects incorporating techniques and cell materials learned and utilized over the course. One project is elected by lab participants and the principal investigator to be carried out. Our most recent 2019 project involved developing a pacemaker to enhance cardiac contractile behavior as well as designing and building an assembly model to streamline the addition of cardiac cells and other materials to sutures.

Evaluation Plan: Model assessment will be both quantitative and qualitative. Our goal is to provide each student with the opportunity to present the lab's annual project in the form of a poster or oral presentation at local and international conferences. These conference opportunities propel our students into professional and graduate programs, university laboratories, and the private and public sectors of biotechnology and medical research. We are ultimately interested in publishing our curriculum in.the Journal of Biological Education. Students are also surveyed at the end of the semester on content, level of difficulty, and their perceived level of mastery of the concepts. Faculty members utilizing the teaching model in the classroom will be asked to judge its effectiveness in monitoring student achievement throughout the semester.

Potential Impact: There is tremendous enthusiasm for the concept of cell-based cardiac repair. Therapeutic advances in this area can fulfill major unmet needs including cardiomyocyte regeneration after heart failure related events.

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Generating Long-Term Resiliency Via Cultural Organization Affiliation in Medical School

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Idea: Culturally-affiliated organizations can help build resiliency among medical students through cultivating professional identity formation.

Need: This study analyzes the effectiveness of membership and participation in a culturally-affiliated organization in mitigating minority student adjustment difficulties to medical school. Results from this project will allow administrators, faculty advisors, and other mentors to 1) respond to difficulties experienced by medical student advisees with recommendations for culturally-affiliated organizations and 2) support the development of resiliency in osteopathic medical students through the cultivation of professional identity formation and association.

Methods: First-year medical students identified a lack of representation, discussion, and extra-curricular options regarding culturally-based health and healthcare within the curriculum at an osteopathic medical school. To address this issue, medical students initiated the process to form a new student chapter of a national organization, consisting of the application and petitioning for approval from student government and administration. Formal recommendation was obtained and administrative approval was granted upon review, leading to formation of the osteopathic medical school's student chapter of a culturally-based national medical organization, supporting Asian and Pacific Islander medical students.

Evaluation Plan: Since its inception, the minority student chapter described has been one of the most active student organizations at the osteopathic medical school: organizing over 40 events, filling numerous regional and national leadership roles, and hosting the regional conference for the past 2 years and hosting the 2019 national conference. This project will be replicated in the 2019-2020 academic year as a similar student chapter is established at a second osteopathic medical school, and the results will be compared. IRB approval and a survey to evaluate efficacy relative to resiliency will be obtained and created.

Potential Impact: Culturally-affiliated organizations can be an additional method for promoting resiliency in minority medical students through the maturation and development of professional identity.

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Advantages of Peer Student Educational Research and Scholarship Mentoring Initiative

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Lake Erie College of Osteopathic Medicine, Lake Erie College of Osteopathic Medicine, Touro College of Osteopathic Medicine, Lake Erie College of Osteopathic Medicine

Idea: Creating a research mentorship program for pre-clinical and clinical medical students to increase scholarly work with the goal of publication.

Need: With plateauing board scores and a unified match process between allopathic and osteopathic students, program directors for competitive specialities have increasingly utilized alternate criteria such as undergraduate medical research to differential similar candidates for interview/acceptance. While there is no ceiling to the amount of research ideas generated by medical students, there is a ceiling to the number of available faculty members to advise students to bring their ideas to fruition. The peer student educational research scholarship and mentoring initiative at Touro College of Osteopathic Medicine - New York (TouroCOM-NY) was created to address this need.

Methods: First-year medical students of TouroCOM-NY 2018-2019 with an already established faculty research advisor were paired with second- or third-year medical students with previous research experience to aid in the initial development and design of a research project, to help execute the research project, to assist in data analysis, and to mentor students in the final writing of posters for conference presentations and manuscripts for submission for publication. Key outcome objective is to foster a scholarly environment for research and assist in continuity of projects. Routine meetings between the advisors and students occurred to ensure that projects were implemented and completed and that mentoring across levels had occurred.

Evaluation Plan: During the first year, 3 pairings were made across first, second, and third year medical students. WIth this collaboration, 15 conference abstracts, 2 oral presentations, and 3 published articles were completed in a 1 year period. IRB approval and survey are being developed to assess the students' opinions on the success of the partnership and how to improve the program for future classes. Greater communication has occurred between the classes and decreased strain on advisors in regards to research mentorship.

Potential Impact: The potential impacts are numerous and include mentoring and teaching experiences for senior medical students, support for junior medical students, and assistance for faculty researchers.

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Introductory Course Provides Exposure to Patient Care in the Ambulatory Environment

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Idea: Introduction to ambulatory care for pre-health profession students by providing hands-on patient care in hopes of employment post-graduation.

Need: As the demand for patient care in the ambulatory environment increases so does the need for provider support. With the aging population increasing and healthcare transitioning to value-based care, adequate training of pre-health professions is crucial in providing safe patient care. To bring awareness and early exposure to pre-health professions students to this environment, the Duke University Masters of Biomedical Sciences and Duke Primary Care (DPC) developed a collaborative selective course for pre-health professions students. A 2-credit selective course was developed. The students engage in learning opportunities through lecture, simulation, and hands-on patient care. Students were equipped with a learning assessment tool that guided their clinical observation. This tool correlated with learning objectives ensuring clinical observation aligned with lecture content.

Methods: Content was broken down into four main learning modules: 1) clinical care foundations, 2) medication management, 3) performance and quality improvement, 4) population health and an introduction to laboratory practice. The intent of consecutively designed modules was to build a deeper understanding of multiple aspects of ambulatory care. Clinical care foundations reviewed content focused on providing an overview of Duke Primary Care. Students learned about policies and procedures that drive workflow, safety procedures including falls safety, patient identification, and infection prevention, as well as lecture and simulation related to obtaining and documenting vital signs. Medication management focused on safely administering medications and vaccines to patients throughout the lifespan. The content included the six rights of medication administration, safety, and medication review during documentation. The performance and quality improvement module focused on identifying improvement opportunities within the clinical environment as it relates to workflow inefficiencies, best practices, and improved patient outcomes. The final module provided an overview of population health initiatives, and programs such as Medicare Shared Savings Program and Value-Based Care. The content also focused on complex disease management and continuity of care. Additionally, students received skill-based training on laboratory practice including point of care testing.

Evaluation Plan: Students gained experience in the ambulatory care environment through a multidisciplinary, multi-faceted clinical rotation. The first cohort enrolled in the spring semester of 2019. Seven students enrolled in the course. Five worked in the primary care setting and two in the urgent care setting. Student placement for the clinical location was randomized. Assigned clinical observation sites allowed students to apply lecture and simulation-based learning in a safe and supervised environment. Student's knowledge was tested through exams and assignments. The average grade of the enrolled students was 94%. Since graduating from the program, four of the students applied and accepted positions within DPC to work as a Medical Assistant in the role of an Encounter Specialist for their gap year. DPC plans to offer this course again in the spring of 2020.

Potential Impact: The course evaluation showed learning objectives, course structure, and clinical experience provided the students with significant insight into primary care. Additionally, students reported this course increased the likelihood they would pursue a clinical position while applying to medical school.

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CBL Promotes an Interdisciplinary, Interprofessional Approach to Patient Care in Allergy Medicine

Fine, Lauren; Steiner, Shara
Dr. Kiran C. Patel College of Allopathic Medicine; Hofstra University

Idea: Using a CBL curriculum focused on distributed learning to promote an interdisciplinary, interprofessional approach to patient care in Allergy medicine.

Need: The incidence and prevalence of allergic conditions within the pediatric and adult patient populations are on the rise (1,2). Concurrently, there is a shortage of Allergy/Immunology specialists and interdisciplinary providers trained to serve these patients on the local and national levels (3,4). Compounding this issue is a lack of training across the spectrum of healthcare on how allergy pathology overlaps and interfaces with common comorbidities seen in primary care such as sleep apnea, obesity, and GERD (5,6). For example, Generalists often manage patients with allergic conditions without a sufficient understanding of the disease pathophysiology, evaluation, and treatment rationale from the perspective of an Allergy specialist or the ancillary members of an Allergy treatment team. This “siloing” of information can be detrimental to patient outcomes and can waste institutional, patient and other resources (7). Educational interventions that focus on interdisciplinary, interprofessional teams with a case-based learning approach can be an effective way to increase the knowledge, skills, and attitudes needed to manage common allergy conditions, ultimately improving cost-effectiveness and patient outcomes (6,8). To this end, we designed an interdisciplinary, interprofessional, case-based curriculum emphasizing distributed learning that promotes a collaborative approach to clinical care of common allergy pathology.

Methods: This year-long, interdisciplinary, interprofessional, case-based curriculum will take place in a large academic medical center. Learners will include: medical students, residents, and fellows within Internal, Family, and Emergency Medicine, Pediatrics, and specialty training programs such as Allergy/Immunology, Otolaryngology, Infectious Disease, and Gastroenterology; respiratory technologists; speech/language pathologists; nursing staff; and clinical support staff. Four, two-hour case-based sessions will be facilitated by Allergy/Immunology attendings and/or fellows. Small-groups of interprofessional, interdisciplinary learners will complete progressive disclosure cases on commonly seen topics across specialties such as: Asthma, Anaphylaxis, Rhinosinusitis, Eosinophilic disorders, dermatologic conditions, and medication-induced allergies. The cases will draw upon the principle of Distributed Learning such that the unique knowledge of each learner will be essential to achieving the case learner outcome objectives. Techniques such as information sharing across learners (to address information “siloing”) and motivational interviewing will be introduced as strategies to streamline care and improve patient outcomes. By the end of each session, learners should be able to diagnose and treat the targeted allergy pathology as well as describe how the interdisciplinary, interprofessional approach to patient care promotes cost-effectiveness and improved patient outcomes.

Evaluation Plan: To evaluate the program’s effectiveness and value, several components will be assessed using qualitative methodologies. To assess accountability, adherence to the mandatory attendance policy will be tracked using sign-in sheets. The session timing and the ability to achieve the session activities and learner outcome objectives will also be tracked. To assess learners’ reaction to the program, online satisfaction surveys will be administered at the end of each session and at the program’s conclusion. Learning will be measured through several methods including: 1. pre/post MCQ assessments with unique identifiers linking subjects’ pre- and post-intervention results; 2. quality and accuracy of answers to case questions; 3. perceived knowledge gains queried by end-of-session/program surveys. Learners’ changes in behavior will be assessed through two methods: Commitment-to-change with follow-up completed during each session and a written self-reflection completed during the final session.

Potential Impact: This interdisciplinary, interprofessional, case-based curriculum, if proven effective, is generalizable to any site nationwide that wishes to promote a team-based, distributed learning model to patient care in order to maximize institutional resources while improving patient outcomes.

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Early Reading Intervention in a Family Medicine Resident Clinic

Yeh, Paul; Lopez, Maria Cynthia
Adventist Health White Memorial

Idea: Implementation of an early childhood literacy program in a Family Medicine Resident clinic using a nationally recognized model, Reach Out and Read.

Need: In the United States, more than 1 in 4 children enter kindergarten with below grade-level reading skills. This ratio is even higher in areas with significant socioeconomic disparities such as Boyle Heights, Los Angeles, with a 94% Latino population and an average median household income of $33,325 a year. Only 5% of the population has a 4-year college degree. Our patients are at higher risk for delays in language, poorer performance in school and life, and lower health outcomes. The American Academy of Pediatrics (AAP) has been addressing child poverty as a key determinant of health and evidence shows that promotion of early childhood literacy is a cost-efficient and effective buffer to the negative impacts of poverty on childhood health and development. Reach Out and Read is one evidence-based model implemented in the pediatric clinic with well-child visits from 6 months to 5 years. By having the medical provider provide a book and intervention promoting and modeling dialogic reading to the parent or primary caretaker, evidence has shown improvement to parental attitudes toward reading, increased likelihood and frequency of reading to children, and increased receptive language abilities after 6 months. By implementing Reach Out and Read, we hope to promote early childhood literacy, bridge the achievement gap in our population, and improve health outcomes of our patients.

Methods: The following interventions will be implemented at a Family Medicine residency clinic, Family Care Specialists in Boyle Heights, CA. 1) A literacy-rich environment will be created with reading corners in the clinic waiting room consisting of bookshelves, tables, chairs, and wall decals. 2) Books in both Spanish and English will be purchased or donated through the Ella Fitzgerald Foundation and made accessible in the clinic. 3) All faculty and residents will complete mandatory online video training on promoting early childhood literacy. 4) Age-appropriate books will be given on every well-child visit for patients aged 6 months to 5 years. 5) Reading surveys will be completed by the physician to assess and promote reading at home. 6) A follow up lecture on the importance of early childhood literacy will be presented to faculty and residents with an informal survey to see if their willingness and competency to promote reading has increased.

Evaluation Plan: Surveys will be collected for a total of 14 months to capture return pediatric visits to the clinic. Data will be analyzed for increase in time, frequency of reading to children, and number of books at home. Additional analysis will also be done for possible increase in development of emergent literacy skills and for decreases in time spent watching television and on cel phones or tablets. Surveys to residents and faculty will be evaluated for increased knowledge and competency in promoting early childhood literacy.

Potential Impact: Implementation will help standardize and improve the resident clinic's ability to promote early literacy in our pediatric patients and help bridge the achievement gap in a traditionally low socioeconomic population.

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Strengthening Resiliency: An Alternative Approach to Bullying and Life Stressors in Adolescence

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Idea: A didactic and group discussion based curriculum to teach and strengthen resiliency skills for conflict resolution in high school students.

Need: High school is a time of various stressors including peer pressure in the extreme form of bullying. According to 2017 CDC Youth Behavior Risk Survey, 19% of high school students reported having been bullied on school property [1]. A group from Florida Atlantic University found students experiencing a combination of cyberbullying and school-based bullying were eleven times more likely to attempt suicide [2]. While there is utility for anti-bullying campaigns, I plan to approach the issue by teaching and strengthening resiliency skills to fight against all life stressors. The same team from FAU found youth with more resilient traits in place were less likely to be bullied, and those who were bullied, were less likely to be negatively affected [3].

Methods: The intervention will focus on 120 sophomore level high school students involved in a health academy course at three high schools in Moreno Valley, California. The time period is planned for six months, and will include the following: 1) One classroom didactic lecture on the topics of bullying, protective factors of resiliency, resiliency skills and builders, and stress management. 2) One classroom group activity with at-home assignments on impulse control, emotional awareness and self-regulation, positive and negative self-talk, flexible thinking, and empathy. 3) One OSCE-style final activity- Students will divide into groups of 4-5 and be required to work through life stressors (i.e. loss of a loved one/illness, failure of a school exam, first job search, conflict with a close friend, and a tragic natural disaster such as a fire or earthquake) presented through vignette and role-play.

Evaluation Plan: Kirkpatrick evaluation model: A pre and post-intervention test on resiliency knowledge will be administered to the students (level 2). A pre and post-intervention questionnaire will also be administered to assess the presence of seven essential resiliency skills. An OSCE-style activity will be held at the end of the six month period, during which one or more resiliency skills will need to be applied to arrive at positive resolution (level 3). Finally, students will be asked to reflect, via journal entry, on the impact classroom sessions had on their school year and readiness to face life stressors (level 1).

Potential Impact: The goal of this study is the eventual establishment of a curriculum in high schools nationwide to prepare adolescents for approaching life stressors and leading productive and meaningful lives after high school.

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Promoting Senior Citizen Wellness in the East Los Angeles Community

Soza, Jose
Adventist Health White Memorial Family Medicine Residency and ¡Vive Bien! Senior Wellness Program

Idea: Obtain baseline health screening information regarding each participant's health, and collaborate for repeat screening in 6 mo to monitor improvement.

Need: Aging senior citizens are often faced with worsening socioeconomic situations that may limit their already advancing medical diagnosis. Additionally, its estimated that 35% of the elderly population is obese, which has been linked with chronic morbidities. ¡Vive Bien! Senior Wellness Program offers the east Los Angeles community free fitness classes and resources regarding diet, nutrition in hopes of promoting wellness. Given the resources and volunteer work of resident physicians, staff, volunteers, the aim of the project was to assess whether these interventions helped promote health improvements at 6 months post initial visit.

Methods: A) Who: Objective is so to promote wellness in the East LA senior citizen population Age > 65. Requirements are that patient is 65 years of age or older, do not need to be active members of WMMC community. B) What: Measuring baseline biometric data including: vital signs, BMI, Lipid panel, fasting blood glucose. C) Where: Community wellness center at WMMC D) How: 1:1 physician and participant review of health screening data. Discuss current healthiness and wellness practices in a 5-10 minute session. Promote healthy lifestyle choices including dietary and exercise advice (advice also includes referral to ¡Vive Bien! classes). E) Reassess biometric data 6 mo s/p initial survey.

Evaluation Plan: Partook in conceptualizing and organization of event in August 2018, and performed health screenings on over 500+ participants from September 2018 – May 2019. Final data available and currently under review.

Potential Impact: Increase community awareness regarding their health perspectives, increase community participation in health events, promote collaboration between patient and physician, and assess efficacy of strategies including areas of improvement.

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Hospitals Against Hunger: Addressing Food Insecurity in a Community Setting

Chen-Joel, Cynthia; Phelps, Jazma
Emanate Health

Idea: Positively screened patients for food insecurity may be discharged with a food voucher to the local food pantry that the hospital has donated food to.

Need: Food is one of the basic necessities of life. Nutritional foods are essential to the healthy growth and development of the body and mind. Food insecurity is defined as a limited or uncertain access to attain nutritious, safe foods. Food insecurity is associated with higher rates of multiple diseases, such as depression, cardiovascular disease, hypertension, diabetes and cancers. Infants and toddlers are particularly vulnerable because the first three years of life is such a critical development period. Food insecurity during this time may hinder children's later academic achievements, workforce participation, health and general well-being. Food insecurity is substantially higher among African Americans and Hispanics, households with children headed by single parents, and families that live near or below the federal poverty line. In 2017, the USDA estimated that around 11.8% of American households, or 15 million households were food insecure. Studies have shown that the cost burden of hunger, which includes hunger-related illnesses, hospitalizations, dental visits, mental health treatment, development of chronic diseases, indirect cost of lost work time due to illness, or workers providing care to sick family members, costs at least $178.92 billion annually in the United States. Thus, food insecurity is a major public health, medical and social issue that must be addressed.

Methods: Hospitalized patients would be screened with a validated two-item questionnaire evaluating for food insecurity. Positively screened patients would meet with hospital social worker to provide community resources, and assist in enrollments in any federal assistance programs or Calfresh. During this meeting patients would be provided with food vouchers to local food pantries, farmers markets, or hot food vendors for which the hospital has donated to. Hospitals will then package the leftover hot food or non perishable items that were to be thrown away for the day to donate to a local partner food pantry. The food items will be given to the food bank to be redistributed to people, including patients who screened positive for food insecurity while hospitalized. All food donated should have been prepared within 24 hours.

Evaluation Plan: All patients who present to the hospital will be screened using the validated two-item questionnaire. A patient screens positive if they provide an answer of always true or sometimes true to either of the following questions: 1) We worried whether our food would run out before we got money to buy more and 2) The food we bought just didn't last and we didn't have money to get more. Social workers would provide wrap around care and follow up via phone calls with patients 1 week and 4 weeks after discharge to determine if resources provided were helpful.

Potential Impact: Community benefit investments, such as donating to the local food banks, are one pathway for hospitals to improve healthy food access. By addressing food insecurity, hospitals could help reduce the number of people affected by hunger, thus reducing hunger-associated illnesses and costs of healthcare

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MAT Made Easy: How to Execute MAT in a Primary Care Visit at HUCLA

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Harbor-UCLA Medical Center

Idea: Use of EMR protocol and MAT champions of the day to increase identification and initiation of MAT in a family medicine residency program clinic.

Need: Despite the rise in opioid use disorder (OUD) deaths and the number of providers obtaining a DEA X waiver, only 48% of X waivered physicians are prescribing buprenorphine (1). It can take years for patients to obtain medication assisted therapy (MAT). At HUCLA we plan to integrate a "medication first" practice for opioid use disorder. At this time the majority of MAT initiation and maintenance occurs in a specialty clinic. In order to meet the critical demand of OUD patients we aim to create a protocol that will allow all providers to initiate MAT at every primary care visit.

Methods: How: • Create an EMR "MAT Visit" Work flow that all providers are expected to use • Create EMR reports identifying OUD patient registry before their visits. Remind provider before appointment to offer MAT services/initiation • Integrate "MAT Made Easy" Protocol Integration into bimonthly PCMH meetings • IF OUD patient does not have appointment, offer patient a specialty appointment • Identify "MAT Champion of the Day" • Clinic "Briefing" Interdisciplinary Meetings – Team (provider, nurse, clerk, pharmacist) identify potential MAT patients from their chart reviews • Continue to assess and address stigma and structural barriers that would decrease the accessibility of MAT for OUD patients Who: HUCLA Lomita FMC clinic patients that have OUD When and where: Lomita FMC Clinic, all appointments – continuity and walk in appointments 11/2019-11/2020 What: Increase the number of OUD patients being offered and receiving MAT at all Lomita FMC Clinic visits by creating a patient registry of new OUD patients through an ICD 10 query of the EMR.

Evaluation Plan: A) Accountability: The OUD patient registry reports will help assess if OUD patients were offered MAT in a more efficient manner. We would assess individual and/or system barriers that may have been barriers to MAT. With these assessments we would conduct PDSA cycles to increase our ability to offer MAT to OUD patients. B) Reaction: Survey providers, nurses and patients 10/2020. C) Learning: With implementation of the "MAT Made Easy" EMR protocol we hope to facilitate providers initiating MAT. D) Behavior: Using the EMR OUD patient registry we will monitor the number of patients with OUD and initiated on MAT.

Potential Impact: By initiating a clinic wide plan directed at providers, nurses, clerks, and pharmacists to identify and initiate MAT, we expect to decrease morbidity and mortality associated with OUD in our clinic population. In addition, our learners will utilize these new skills at future employment opportunities.

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Taking Addiction to the MAT: Implementing a Curriculum in a Family Medicine Residency

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Emanate Health Family Medicine Residency Program

Problem Statement: We currently have no faculty trained in Medication Assisted Therapy (MAT) who can serve as role models for and provide training to our residents.

Rationale: Addiction is a national health crisis. In 2015, over 27 million people in the United States reported current use of illicit drugs or misuse of prescription drugs, and over 66 million people (nearly a quarter of the adult and adolescent population) reported binge drinking in the past month.2 Around 68% of the more than 70,200 drug overdose deaths in 2017 involved an opioid. It is estimated that on average, 130 Americans die every day from an opioid overdose3Our health care system has not given the same level of attention to substance use disorders as it has to other health concerns that affect similar numbers of people. It remains segregated from the rest of health care. As a relatively new program, we have embarked on an initiative to educate and train our faculty and residents alongside each other on Medication Assisted Treatment (MAT). Patients in our community and in the future practice communities of our resident graduates need physicians with skills in addiction medicine.

Methods: The Faculty and Resident educational component consists of presentations occurring on average every 6-weeks during our block didactics on Wednesday afternoons. Various aspects of addiction medicine will be presented including a history and overview of addiction, motivational interviewing, MAT including case examples, as well as narratives and insights from people in recovery. All faculty and licensed residents will take the 8-hour online buprenorphine course. A Pre-test of Knowledge, Attitudes and Skills was administered to all faculty and residents prior to the educational intervention (n = 40) which began a few weeks ago. A similar but more detailed post-test evaluation of the intervention will occur at the end of the training year (June 2020) to measure program impact. All presentations will be video-recorded so that those unable to attend one can view it as soon as possible. There will be a brief evaluation form completed by all attendees at the end of each presentation. Of note, the second year residents have additional reading and clinical exposures during their psychiatry/addiction medicine rotation. Some of the psychiatrists/addictionologists presenting will form a consultation group available to our faculty and residents as patients are evaluated and treated in the hospital and the outpatient clinics.

Results: Pre-training surveys were completed by 40 participants: core faculty (7), community preceptors (3), and residents (30). These surveys measured knowledge, skills, and attitudes about addiction and competency to use MAT on a 5-point Likert Scale. As our curriculum was so recently launched, there has not been ample opportunity to analyze the pre-training surveys. However, we plan to present those results. There has been one presentation thus far on the use of Vivitrol to treat alcohol and opioid use disorders. The conference was rated by attendees as “Excellent.” By the time of the IME Conference, we expect that our program would have had 3 presentations. A similar, but more lengthy, post-training evaluation to measure program impact will occur in June 2020. Demographics, medical and social history and treatment type will be tracked on patients treated during the training period.

Potential Impact: We expect that training and increased practice will enable our residency faculty and residents to better assess, counsel, and treat many patients that we did not treat prior to training. We will ensure sustainability of these skills over time, benefiting future residents and patients.

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Integrated Community Medicine: Elevating Resident Confidence and Teen Health at a School-Based Clinic

Bahrainwala, Lulua; Martin, Claudia
Emanate Health Family Medicine Residency

Problem Statement: A School Based Clinic immersed in community medicine can improve overall reproductive health access and resident confidence with adolescent health.

Rationale: The majority of adolescent health issues range from un/intentioinal injuries, to substance abuse, mental health, and sexual reproductive health issues. Such problems are mostly diagnosed clinically by means of open communication and necessitate a practitioner most comfortable with adolescent health. To illustrate, at our residency's base hospital, Queen of the Valley in West Covina, CA, 88.7% of total births were Latinas ages 14-19 years in 2018. Family practitioners are in a prime position to bridge knowledge gaps while expanding timely health care access, and ultimately empower teens to take charge of their health. Moreover, SBCs provide residents a wider range of outpatient clinic training options as it offers them a depth of experiences ranging from adolescent care, community outreach and advocacy.

Methods: Established in 2016, the SBC is inside a high school campus in Pomona, CA. It provides services to the community and to a lesser extent, the students. The SBC is part of a federally qualified health center (FQHC) serving the San Gabriel Valley. To support the residents, a three-hour training on reproductive health practice was conducted by Essential Access Health. In terms of continuity, each resident is given a brief overview of the clinic workflow. Quarterly faculty lectures on adolescent health are planned. In terms of outreach, along with the FQHC health promotion team, the faculty and residents presented at 'Back to school night,' 'Coffee with the principal', and visited the school nurse, coaches, and surrounding schools. Currently, the clinic only sees teens and is scheduled every Friday afternoon. The clinic is staffed by one or two residents, second year or higher during their Community Medicine rotation and a preceptor, a Certified Health Worker, and an assigned medical assistant. Residents can opt to do an elective in Adolescent medicine. In terms of the students/patients, handouts on all contraceptive options are available for education and distribution. Anatomical models assist with resident and patient education. Contraception plans and counseling is completed with teen. Through the use of interactive educational media and electronic educational materials, we hope to engage the attention and interest of our adolescent patients.

Results: Residents completed online educational modules on reproductive health. An assessment on basic contraception guidelines was administered to all the residents (N=30). Results showed 63% of the questions were answered correctly. An impact assessment of the SBC on resident adolescent health knowledge will be done after one year since implementation. Adolescent health-directed didactic sessions will be formally assessed through a Likert scale. Overall resident knowledge and attitudes will be followed and measured by ACGME milestones. Health outcomes will be assessed based on age, gender, race, ethnicity and geographical location for continued quality improvement and sustainability in our residency program.

Potential Impact: The SBC will improve access to reproductive health and promote resident confidence and knowledge of adolescent health, while providing for a teen-friendly space of well-being.

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Embracing Interactive Technology to Teach Didactic Year Physician Assistant Students

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Dominican University of California

Idea: Integrate adaptive technology into Anatomy curriculum.

Need: Physician assistant departments do not have the extensive resources and instruction time to teach anatomy like medical schools. With faster computers and large data storage on the cloud, interactive technology has become quite useful and affordable. Interactive technology is algorithm-based systems that take advantage of advanced mathematical formulas and machine learning concepts to adapt specifically to individual learners. At its core, such systems are intended to identify what a student does and doesn't understand, identify and provide content that will help the student learn it, assess again, help again, etc., until some defined learning goal is achieved. One of its greatest potentials is to target instruction at just above the student's ability level (to challenge but not discourage the student) and at the student's specific content needs. A recent study concluded that some adaptive systems were nearly as effective as one-on-one human tutoring.

Methods: Access to the LearnSmart interactive technology will be made available to didactic physician assistant students in the Anatomy course. Lectures using the technology will be given as well as class and after class assignments using the technology.

Evaluation Plan: At the end of the course, didactic presentations will be evaluated through review of the student's responses about the course structure and curriculum. Presence of comments/recommendations about the course and usage of interactive online technologies will be reviewed in written feedback from the course. A PA student's survey at the end of the course after implementation will assess perceptions about the effectiveness and learning outcomes from using interactive online tools. End of course student evaluations about course content will be monitored for depth of reflection and for effectiveness of teaching. Student performance will be evaluated against the other cohorts.

Potential Impact: Interactive technology will assist the learner and will provide effective and affordable tools to utilize to improve learning outcomes. Examples are cadaver labs, histology and CT scan, and X-ray imaging labs providing the means to conduct labs without tying up resources.

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Building Clinical Reasoning Skills of PGY1 Medicine Residents through a Multimethod Curriculum

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Idea: Building clinical reasoning skills of PGY1 medicine residents through an 8-session multimethod curriculum.

Need: Effective clinical reasoning skills are crucial to clinical competence. Diagnostic error is common in medicine and causes suboptimal patient care and significant death per year [1]. Cognitive errors, which include inaccurate medical knowledge and flaws in decision making, are one the most common and important cause of the diagnostic error [2]. While the ACGME describes clinical reasoning as a core competency [3], most institutions report that they lack a dedicated clinical reasoning course in their curriculum [2]. Studies have shown that teaching clinical reasoning may provide a meaningful insight implicated in reaching clinical reasoning skills and develop a self-reflective practice that may decrease diagnostic errors and improve patient quality of care [3]. We plan to implement a clinical reasoning course for PGY 1 residents using a multimethod curriculum.

Methods: This intervention will focus on the twenty PGY1 internal medicine residents in a community residency program and will include 8 one-hour sessions over the first three months of residency. Our goal is to help residents become more accurate and efficient in the intake of new patients from the emergency department. We will utilize progressive disclosure cases to build clinical reasoning skills. This process is fully interactive as each resident working in pairs goes through the problem-solving process with each case. Each session will focus on a common inpatient presentation, e.g., chest pain, dyspnea, acute abdominal pain, syncope, hypotension, GI bleeding, acute diarrhea, and hyponatremia. To help unpack the thinking process, each presentation provides the opportunity to develop the building blocks of clinical reasoning, e.g. forward and backward reasoning (defining and refining the symptoms to make a reliable problem representation), pattern recognition and hypothesis testing. Residents should move from simple pattern recognition to appropriate analytic thinking. To aid residents in building a set of illness scripts least three cases will be discussed in each session; using both classic presentations and less typical presentations. The course director will oversee all elements of the course: planning, oversight of each session, and gathering of all evaluation data (questionnaires and pre-post tests).

Evaluation Plan: The new curriculum will be evaluated utilizing multiple methods. We will be tracking session administration and resident attendance. A standard Student Satisfaction Inventory will be used to assess the resident's perception of the intervention at the end of the fourth session and the final session. Data from session four will be utilized to make any needed changes in the final four sessions. We will use the Diagnostic Thinking Inventory and the Clinical Reasoning Examination at the beginning and the end of the intervention to measure learning [3]. The pre-tools will be administered during resident orientation, and we will have an extended final session to accommodate the post-test. To gain information about the usage of the techniques in their actual clinical work we will administer a brief survey at the beginning of sessions 6 and 7 to ask to gather examples of how each resident has used these skills in solving a “real” case.

Potential Impact: If this pilot demonstrates that the course improved clinical reasoning skills it could be shared with other training programs that care for adult patients within inpatient settings.

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Developing a Curriculum for Providing Culturally Competent Care for LGBT Patients

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Idea: Development and implementation of a comprehensive curriculum in LGBT medicine—which could potentially be adapted for any family medicine residency.

Need: The Long Beach Memorial Family Medicine Residency Program has long been a champion of health equity. We continually strive to bridge the gap in health care disparities in our most vulnerable populations, which includes LGBT patients. Los Angeles County is home to the 2nd-largest population of LGBT residents in the US, only behind NYC, and although there are a number of social resources in our county for these residents, we understand the need to create a safe space for these individuals in a medical setting. The disparity in health care between LGBT patients and their cisgender and/or straight counterparts remains large. In the LGBT population, there are high rates of substance abuse, violence, and suicide. There are lower rates of regular preventative health visits and mental health treatment. And, among transgender individuals surveyed in the 2015 US Transgender Survey, 33% of trans individuals responded that they had a negative experience with a health care professional. The disparity in health care outcomes is likely because culturally-competent medical education in LGBT medicine is lacking. One report showed that a median of just five hours of training was dedicated to LGBT issues in US medical schools. LGBT medicine is still an emerging field with an immense breadth, but primary care providers are on the 'front lines' of medicine. We must thus do a better job educating ourselves in order to ensure the trust and well-being of this patient population.

Methods: Our curriculum strives to help bridge the gap in health outcomes, and we firmly believe that this can and should be achieved at all family medicine residency programs. Some of the more innovative parts of our curriculum include: 1) The LGBT Evening Free Clinic: a partnership with the Long Beach LGBT Center to establish primary medical care for under- and un-insured LGBT patients 2) A twice-monthly trans HRT clinic, where all residents will rotate and learn how to provide culturally-sensitive care to transgender adult patients 3) Quarterly lectures on LGBT topics, including pre-exposure prophylaxis, HRT, gender-affirming surgery 4) An LGBT Medicine area of concentration that trains one resident through the three-year residency to be an expert in the LGBT Medicine field. Areas for future growth: 5) Gender-affirming care for adolescents 6) Faculty interested in AAHIVM board certification—the potential for primary care HIV treatment 7) Hepatitis C treatment in clinic 8) Trans and LGBQ+ after-hours support groups.

Evaluation Plan: As we build out our LGBT Free Clinic and our HRT clinic, we plan to provide all of our patients with questionnaires at each visit to assess the specific needs of our patient population. This will allow us to continually improve clinic flow and give us a better understanding of how we can better serve our patients. We also plan to collect objective data on mental health in this patient population. By screening for depression and anxiety, we can track the emotional well-being of these patients over time. We additionally plan to gauge resident engagement and knowledge through surveys both prior to and after each quarterly LGBT medicine lecture. We anticipate that, through data collection and analysis of patient questionnaires, PHQ-9s, and no-show rates, we can demonstrate that a robust LGBT curriculum can help lessen the disparity in health outcomes between our LGBT and non-LGBT patients.

Potential Impact: With the creation of an "area of concentration" in LGBT medicine in our program, we will train doctors that are highly effective clinicians in the health of LGBT patients. LGBT medicine is in its infancy. We plan to be leaders in this new field of medicine.

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Transforming Pediatric Training:
Rooting Curriculum in Cultural Responsiveness and Service Learning

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Idea: Expanding training for Pediatric Residents beyond the exam room to include service learning rooted in Cultural Humility and Adult Learner techniques.

Need: The profession of pediatrics has changed, demanding that the pediatrician act as a medical home for even the most complex patients. To be an effective healer, the physician must not only diagnose and prescribe, but also understand the broader social and environmental context, including how to navigate complicated and sometimes convoluted systems of payment and services. Today's pediatrician needs clinical competencies for transformed healthcare systems that were not emphasized a few years ago. The Institute of Medicine, the American Academy of Pediatrics, and HRSA's Advisory Committee on Training in Primary Care Medicine and Dentistry, recommend learning environments and competencies that represent future health care delivery, including addressing non-medical (i.e. social) determinants of health; patient advocacy, cultural humility, and health literacy. This tall order aligns with medical education reform efforts in calling for the addition of a new pillar of study that includes skill and knowledge around health systems science [2] While adding this content is essential, it is not sufficient. Medical education must also utilize principles of adult education to effectively support pediatric trainees in learning this content [3]. Adult learner literature suggests that the utilization of experiential learning, case based discussion, and feedback allow the learner to adopt a more assertive role in their learning and to transfer academic knowledge to practical application learning.

Methods: This cool idea seeks to introduce health systems science curriculum to pediatric residents at UCSF Benioff Children's Hospital Oakland over the course of three consecutive academic years during their 4-6 week outpatient rotations. The key outcome objectives will be: 1) At least 80% of graduating pediatric residents will indicate confidence in their ability to care for psycho-socially complex children. 2) At least 80% of graduating pediatric residents will indicate that participating in this curriculum increased their skills in providing care to psycho-socially complex children. This curriculum will include a high number of service learning opportunities outside of the hospital/clinic setting. In addition, residents will be scheduled to participate in small peer-based seminars (4-10 trainees/seminar) every other week while on rotation. The dedication of curriculum time to these seminars will be one of the essential ingredients to helping residents integrate their service learning experiences with their direct patient care experiences. Similarly, facilitators will assist residents in putting their service learning opportunities with a context of Cultural Humility and Equity and Inclusion. These seminars will be prioritized over clinical duties as a way to ensure their viability and to signify their importance. In alignment with CH practices and adult learner techniques, facilitators will elicit on-going feedback from residents allowing the curriculum to be co-created over time.

Evaluation Plan: To ensure accountability, data will be collected throughout the intervention period including but limited to pre/post surveys and attendance records. More specifically, residents will be survey before, during, and after (post 2 years) receiving this curriculum about their intentions, knowledge, and confidence in providing pediatric care to patients. Additionally, residents will be surveyed after each service learning experience and seminar to gather their reactions to the curriculum and see if learning and behavior change is occurring as intended. Additionally, preceptors may be surveyed to see how the curriculum is affecting trainees' interactions when interfacing with service learning preceptors.

Potential Impact: The expected impact of this study is to improve pediatric residents' abilities to care for the psycho-socially complex children of today. By providing effective teaching of this curriculum, pediatricians of the future will be more equipped to partner with their patients in achieving health.

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Complaints We Complain About:
A Signs/Symptoms and Evidence-Based Approach Didactic Curriculum

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Idea: A curriculum series targeted to PGY1-3 residents aimed at developing evidence-based approaches to unpopular chief complaints.

Need: Prior studies have demonstrated delayed times to provider evaluation or "cherry-picking" chief complaints among trainees. Perceived diagnostic ambiguity in work up was identified as a primary motivating factor in delay to provider evaluation. In review of our didactic curriculum, many aspects of the curriculum focus on education around a particular diagnosis rather than a sign/symptom or diagnostic approach to a chief complaint. There was no regular didactic series in place to cover "section 1: signs, symptoms, and presentations" content, which makes up 9% of the material tested on the in-training examination (ITE), based on the ABEM Model of Clinical Practice. Residents in a previous cohort were surveyed regarding perceived educational needs and overwhelmingly expressed in interest in a new curriculum focused on challenging patient presentations. We plan to implement a symptom-focused curriculum centered around unpopular or commonly avoided chief complaints in an effort to improve resident comfort with diagnostic ambiguity and subsequently expedite and improve patient care.

Methods: The intervention will focus on 42 emergency medicine residents in our program and take place over 18 months. The new curriculum will include a monthly 50 minute lecture focusing on a chief complaint tied to our current systems-based didactic structure. Lecture focus will be determined by consensus among core education faculty regarding perceived resident need. We plan to compare section scores on the ITE exam "section 1. signs, symptoms and presentations" from before and after implementation of this series, using spring 2019 scores as the control group and spring 2020 scores as the intervention group. We also plan to survey the group regarding the utility and applicability of the series to both clinical practice and to preparation for the ITE.

Evaluation Plan: Monthly presentations will be evaluated by immediate resident response to previously implemented didactic evaluations. We will develop a resident survey six months following the introduction of the new curriculum to assess educational value of these sessions. Residents will be allowed to give direct feedback as well as report subjective sense of change in comfort with addressing the chief complaints focused on in the new curriculum.

Potential Impact: Implementation of a chief complaint focused curriculum provides an opportunity for improving resident education and facility in addressing diagnostic approach to commonly avoided patient presentations.

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A Single Coverage Critical Care Simulation Series for Senior Residents

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Idea: An individual simulation series for PGY3 residents focused on critical clinical scenarios managed in a single coverage provider setting.

Need: Though residents gain some exposure to the community setting during their time in residency, much of residency training occurs in the academic setting with multiple providers across PGY levels, allowing for delegation of critical resuscitation tasks to other team members. We posit that residents may not have significant exposure to the resuscitation of critically ill patients in the single coverage community setting throughout residency yet only 12.9% of emergency medicine residency graduates go on to a full-time academic faculty appointment, demonstrating that a significant percentage of graduates will likely practice in the single coverage or community environment. We plan to implement dedicated simulation sessions for PGY3 residents designed to simulate the single coverage or resource-limited environments to improve trainee exposure and comfort to these challenging clinical scenarios.

Methods: The intervention will focus on 14 PGY3 emergency medicine residents and be implemented over the course of the year. Cases will be designed by simulation faculty drawn from clinical experience in community practice. Residents will be surveyed prior to the session regarding prior community setting resuscitation experience and comfort level with practicing in this setting. The intervention will include an individual simulation session for each PGY3 resident focusing on a high complexity resuscitation administered by core simulation faculty followed by an immediate debriefing session. Residents will also receive an additional one on one video review session with a faculty member focused on team management and clinical decision making in the single coverage setting.

Evaluation Plan: Successful implementation of this simulation series would include completion of individual sessions for each graduating resident. Learner experience will be gauged by a post-simulation session survey regarding perceived educational value and improvement in comfort with clinical practice. Results will be compared to the pre-session implementation survey to assess efficacy. We will also follow up with our graduates in community practice in one year with an additional survey to re-assess the value of this simulation in light of their clinical experience.

Potential Impact: A simulation curriculum focused on single provider resuscitation will improve resident performance and comfort in varying practice environments and is broadly applicable to many emergency medicine training programs.

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Using the Evidence to Teach the Evidence:
Empowerment Evaluation in a Graduate Medical Curriculum

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Idea: To assess the effectiveness of a Pediatric Residency evidence-based medicine (EBM) curriculum using the empowerment evaluation method.

Need: Pediatric Residents are expected to show competency in being able to "critically evaluate and apply current medical information and scientific evidence for patient care" [1]. As such, residency programs are expected to address this core competency in their curriculum, but many learners are underwhelmed with their training [2]. A survey of our current residents at a university-affiliated, academic program revealed the same dissatisfaction with our scholarly activity curriculum. In fact, the majority of survey respondents felt that the current training acts as a barrier to their participation in a scholarly activity project. The empowerment evaluation has been utilized to successfully evaluate and improve a pre-clinical, undergraduate medical school curriculum [3], but it has not yet been utilized in graduate medical education curricula. By engaging key stakeholders, this form of evaluation fosters a community of equality to provide a 360-degree view in assessing the quality and effectiveness of a curricula. It also cultivates a "culture of evidence," self-reflection, and collaboration [3]. The empowerment evaluation could also be applied to assess learner attitudes and rotation-based curricula, expanding beyond the pre-clinical education.

Methods: At our institution, Pediatric and Medicine/Pediatric Residents on a Pediatric rotation have a protected didactic block on Friday afternoons (average attendance=25-30). The curriculum will span 18 months and is divided into one-hour sessions that occur every 3 months. Presentation slides and handouts will be available to all residents in a shared electronic folder after the session. All surveys will be provided in paper format to the attendees and as an online form to the remaining residents. At the end of each hour, attendees will complete a feedback evaluation. These evaluations will be reviewed by the course faculty who will reflect and use the data to support or refute their current methods and to decide on potential revisions, if needed. Interval objective and learner needs and attitudes evaluations will be conducted. All surveys and evaluations will be sent to committee members in a timely manner for review. This evidence will be used in combination with faculty self-reflection to discuss the next steps to refine the curriculum. The committee will consist of resident representatives, EBM course faculty, Pediatric Residency program director (PD) and assistant PD, and a "critical friend," per the empowerment evaluation [3]. The "critical friend" is a trained evaluator who facilitates the conversations and ensures that all key stakeholders have an equal voice.

Evaluation Plan: Learners will complete a baseline knowledge and attitudes assessment at the beginning of the first session and at the end of each semester. In addition, they will complete a feedback evaluation at the end of every session. Objective evaluation will occur at the beginning of the course and at the end of each semester. Aggregate objective results will be compared to the baseline exam to assess changes in learner knowledge. The semester surveys will also ask learners if or how they have used EBM principles learned in the course for the previous semester. The evaluations will be reviewed by the committee to appraise the effectiveness of the curriculum. Proposed changes will be discussed by committee members in a collaborative, egalitarian culture, as per the empowerment evaluation method.

Potential Impact: By administering an effective EBM curriculum, residents will obtain the necessary skills to practice EBM to provide high-quality patient care. Furthermore, the empowerment evaluation could be used in any core curriculum topic in all specialties and in clinical rotation-specific curricula.

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Is Continuity the Key to Cultivating Primary Palliative Skills in Oncology Fellows?

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Idea: To design a novel, longitudinal palliative care rotation to improve second year hematology-oncology fellows' knowledge and skills.

Need: National guidelines recommend that all patients with advanced cancer receive dedicated palliative care (PC) services, but there are too few specialty-level PC providers to meet this need [1,2]. In oncology, this gap might be met by oncologists providing primary PC for patients with less complex symptom management and communication needs. Evidence suggests that practicing oncologists are not meeting the PC needs of patients, which may be a consequence of gaps in their fellowship training [1]. While hem-onc fellowships require fellows to demonstrate competence in pain management, hospice, and PC, studies have shown major deficits in hem-onc fellows' educational experiences and confidence in palliative care [3]. Fellowships address these educational needs variably, and individual programs design their curricular content. At Fox Chase Cancer Center, a short PC rotation of 2-3 weeks has not allowed hem-onc fellows to learn the essential skills of PC. Fellows' feedback about this required PC rotation showed a major need for improvement in structure, duration, and symptom management skills. A chart review of fellows' deceased patients showed significant gaps in advance care planning documentation: 47% of deceased patients had an end-of-life discussion, only 19% had an advance directive, and 10% had a documented code status. To address these educational and skills gaps, we have designed a novel, longitudinal palliative care rotation to promote engagement, knowledge and skill acquisition.

Methods: During the pilot phase of the longitudinal PC rotation, 6 second year hem-onc fellows will provide PC for 4 of their oncology patients over 6 months in multiple settings: in their oncology clinics with attending oncologists, in PC clinics with a supervising PC attending, and during inpatient admissions. Fellows select patients with a range of active PC issues to improve skills in a number of domains. Fellows are asked to identify personal learning goals for the rotation with their career plans in mind. Fellows are also provided with learning objectives based on selective PC fellowship milestones in three skill domains: 1)Symptom management 2)Documentation of advance care planning and 3)Interprofessional collaboration.

Evaluation Plan: We will use a mixed methods approach to evaluate fellows' PC skill confidence, knowledge, skills, and the rotation's acceptability. Fellows who have completed only the older, discrete PC rotation will serve as comparators. With a small number of fellows, multiple methods will enrich evaluation of this intervention. Evaluation methods by Kirkpatrick level include: 1)Reaction: Surveys and semi-structured interviews to assess rotation acceptability. 2)Learning: Surveys with assessments of knowledge and skill confidence before and after the rotation. 3)Behavior: 360 evaluations from the PC interdisciplinary team, chart reviews of pain and advance care planning documentation, and tracking of fellows' participation in inpatient and outpatient PC encounters for their continuity patients. 4)Results: Advance directive completion rates and chart reviews.

Potential Impact: Our long-term goal is to improve the quality of PC education and disseminate best practices for teaching primary PC. If this new structure proves valuable, feasible, and acceptable, it will serve as an innovative model for other fellowships and may enhance the care that patients receive.

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Autism: Putting the Pieces of the Puzzle Together for Medical Students: A Fourth Year Flexible Elective

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Idea: A 4th year flex elective for medical students to increase knowledge, skills and comfort working with Autism and Autism Spectrum Disorder patients.

Need: In recent years, much attention has been focused on Autism Spectrum Disorder (ASD) due to the steadily increasing prevalence rates. The most recent data published by the CDC in 2014 estimate that approximately 1 in 68 children in the US has ASD [1]. Primary care providers play a critical role in the identification and treatment of children with autism and ASD, and thus must be appropriately trained, yet health care providers receive little or no training on how to diagnose and treat patients with autism [2,3]. Although the need is great, there is very little research related to medical education on Autism/ASD. In fact, there is a small body of literature that addresses what healthcare providers should know about ASD and less on how such content is best taught [3]. An Ovid search conducted by the authors revealed only 2 recent articles that discussed how medical students are educated on autism and issues related to autism. Pediatric primary care clinicians have reported feeling ill prepared, uncomfortable and overwhelmed by the complex needs of patients with ASD and developmental disorders, which can negatively affect quality of care [3]. This is a topic that has been greatly neglected in medical education. The solution: a four-week flex elective offered to 4th year medical students who are interested in enhancing their knowledge, skills and confidence in caring for patients with Autism/ASD and working with their families.

Methods: The course will be a 4week online flexible elective offered to 4th year medical students 3 times a year (November, December and January) for 5 learners each month during this pilot. Some of the course activities will include: 1) Read and write a reflection on the book, “Waiting for the Light Bulb” by Dr. Lisa Pena; 2) Complete pre-assignments and attend weekly 2-hour sessions; and 3) Do four hours of observation (with guided reflections) with 3 local professionals - occupational therapist, speech therapist, and a Behavioral physician. We will connect each student with providers at some point during the four-weeks in a manner that fits with their residency interviewing schedule. The overall four-week plan is as follows: Week 1, the learner will be exposed to signs and symptoms of autism and making a diagnosis. Normal speech development will be reviewed using case-based scenarios. Week 2 will cover referrals and community services available to children with autism and their families. Learners will have an opportunity to search for community resources and formally present their findings. Week 3 focuses on treatment options for autism, and ways to improve communication between the patient and others. Learners will be required to create a learning tool for a child with autism. Week 4 will focus on ideas to help and support patients and their families through the lifespan. They will also reflect on what they learned throughout the four weeks. The course will be credit/no-credit.

Evaluation Plan: The curriculum will be evaluated using multiple methods. 1) Tracking of learner participation in sessions and in participation in the three field observations; 2) Review of leaner reflections using rubrics to guide feedback and assess overall quality of reflections; 3) Assessment of learner knowledge using brief online pre- and post-quizzes; and 4) Final course evaluation questionnaire to gather data on the quality of the overall course (organization, teaching, individual sessions, field observations, assignments/feedback). A follow up survey will be sent out six months after the course via email to ways each learner is utilizing the knowledge, skills and perspectives gained.

Potential Impact: If this 4th year flex elective curriculum is successful, it can be shared with other medical schools. It can also expand to include Primary Care residents, and other Allied Health students who are interested in improving the quality of care they provide to patients with Autism/ASD.

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Implementing Value-Based Practice in Undergraduate Medical Education

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Idea: We are developing in-class activity to enhance medical students' understanding of values within the healthcare field.

Need: In healthcare, while evidence-based practice relies on objective evidence derived from research, values are often synonymous with ethics. Values, however, are much wider than just a narrow view of ethical principles; values cover anything that is valued – they are used to weigh evidence in order to reach a decision and choose a particular action. Evidence-based practice (EBP) and values-based practice (VBP) are complementary partner components of clinical decision making. Both EBP and VBP offer clinicians a way to achieve the objectives of improved quality, improved patient satisfaction, and reduced costs. While clinicians are comfortable making decision based on evidence-based science, values-based practice adds more layers of complexity that take into consideration patient and other stakeholders' priorities. Values underpin core components of undergraduate medical education including cultural competency, bioethics, public health, interdisciplinary teamwork, and patient communication. The values-based practice is a promising framework for teaching these skills in an engaging and richly contextual way. By teaching VBP, we will enhance the student's awareness of VBP and give them an overview of how to integrate VBP in their practice.

Methods: We will teach VBP in class through clinical cases. Within each case, we will highlight the principles of VBP. Through the skills of awareness, reasoning, and communication, we will teach students how to grapple with the complex set of values that will be presented to them in practice. Each case will contain objectives and skills that explain what the students should be able to accomplish by the end of the session. Through in-class case discussion, the students will work in small groups (3-5) and identify the values in the case and recognize the diversity of values present within health care encounters. At the end of the class, the students will complete a worksheet we have developed that highlight the principles VBP in the discussed case. In their small groups, the students will reflect on the values that are being expressed in each case and they will consider a decision that they might have made if they are the physician on the case. Instructors will collect worksheets and case write-ups and provide feedback to each group.

Evaluation Plan: Students will be asked to complete an anonymous survey to assess their perception of the activity and their views on and understandings of values after completing the class exercise.

Potential Impact: VBP seeks to build trust with patients and team members through shared decision making. By teaching VBP, we will enhance the student's awareness of VBP and give them the skills that will enable them to work in a respectful and sensitive way with the different values present in health care practice.

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Best Practices in Academic Medicine and Medical Education: A Research-Based Portfolio

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Idea: A portfolio of supported practices in medical education based on a tiered framework aimed to inform discussion of best practices in academic medicine.

Need: The usage of peer-reviewed, research-based practices in academic medicine may often be supplanted by the innovative ideas of key administration and faculty personnel rooted in experience, observation, and professional opinion. As new schools create or existing schools revise curricula or institutional processes, discussion and practice can be best guided by informed understanding of standardized definitions of terms, historical context, and ongoing research pursuits. Our examination of the literature has found a plethora of observational and descriptive publications intended to inform the medical education community of localized relationships and methods; similarly, we have found a dearth of interventional analyses aimed at identifying cause-and-effect relationships useful to guiding an informed change to current execution. Student understanding of supporting evidence and rationale to any modification in institutional ideology may facilitate implementation of practices and be essential to their effective product. Our recent experience as a new medical school highlighted the utility of informed discussion at all levels of an educational institution. The user may contribute more efficiently with an understanding of underlying principles. To these ends, a centralized, annotated hub of referenced materials can empower the decision of administrations, committees, and interest groups in identifying best practices in academic medicine and medical education.

Methods: We established a framework of topics to create a general overview of medical education. This framework divided topics by level of instruction within the primary setting of allopathic medicine. The three broadest layers constituted Learning and Teaching (e.g. a classroom), Institutional Issues (e.g. a medical school) and National Regulatory Issues (e.g. an accreditation body). These three layers were further subdivided non-comprehensively to focus on issues of particular relevance and interest to our current educational situation. Relevant questions of interest were identified within this framework using leadership and student input. These included, but were not limited to: curriculum, pedagogies, and the admissions process. In our research, we began by selecting topics of utmost situational importance to explore in depth in an effort to identify current best practices in the field using both peer-reviewed publications and grey literature. We continued by defining key terms and exploring the historical contexts of our topics of interest. A literature review was then conducted to collect outcome data utilizing key search terms pertinent to the given topic and the aims of this study. We compiled the information in table format to organize the data, using keyword tags and short summaries, as well as sorting by types of outcomes. This data was reformatted and uploaded to a publicly accessible website to facilitate usability and reference.

Evaluation Plan: Throughout the course of our investigation, we approached interested parties to obtain additional topics of interest which merited further research. At that time, we presented our concurrent framework for feedback and expansion. Upon completing initial research of a sufficient number of topics, the framework and compiled data were presented via the website to University leadership with the intent of receiving qualitative feedback and guidance on future direction. Our next step includes presenting to committees within the university. This will serve as a pre-survey to determine how committee members currently make decisions and assess their familiarity with best practices in the field. This is an ongoing project designed to be built upon by future students through collaboration with faculty, administration and other interested observers. We envision it as a resource that can inform conversation and enact changes regarding medical education and related spheres beyond our institution.

Potential Impact: This portfolio may facilitate a general understanding of the current state of medical education and any new innovations in the field, thus allowing best practices to guide conduct by faculty appointed to committees outside their experience and students learning and providing informed feedback.

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Development of an Innovation-focused Course in a Medical School Curriculum

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Idea: A medical school track to help medical students learn to propose and advance new ideas.

Need: The rapid advance of medical technologies and the demand for personalized medicine in tandem with the increasingly complex regulatory landscape have created a need for trained physician-innovators and entrepreneurs [1]. With the NIH stressing the necessity for advancing innovation in medical training and the increasing costs and complexities associated with it, the need for informed innovators and engineering (I&E) has never been greater [2,3]. We have witnessed an immense interest within our College of Medicine (COM) and undergraduate pre-med populations for the integration of an I&E program within medical education. From a survey of 300 pre-medical students and 75 current medical students at the UF COM, we found that 83% of respondents are interested in an innovation-based curriculum during medical school. This trend is also found at a national level where the number of I&E programs are growing, with Niccum et al. reporting a total of 13 I&E programs in 2016 [1]. Our own literature and web-based search of US allopathic medical schools found 28 I&E programs in existence in 2019. To meet the appetite for I&E in the curriculum, we developed a UF COM Innovation Track to be implemented in August of 2019 based on the strengths of the University and local community, the interests and goals of participants, and the frameworks used by existing I&E programs.

Methods: Enrollment for this program will target medical students at the UF COM, beginning during the first year of medical school and continuing until completion of a capstone project during their senior year. This course will be initially composed of: 1) didactic teaching during years 1 and 2 with 4-5 lectures per semester on a variety of topics including FDA regulations, patent law, and Biomedical Engineering (BME). Lectures will be by interdisciplinary lecturers from University departments and community resources (e.g. UF's Engineering Innovation Institute, BME department, local entrepreneurs). Each lecture will be 1-2 hours. 2) Team-based problem-solving and innovation: During years 3 and 4, medical students will form teams with engineering students. These teams will interact in the clinical setting and will work towards identifying a problem, developing an idea and creating a prototype. 3) Presentation of Capstone Project: Each team is required to complete and present a capstone project that summarizes the team's collective work during the previous years. Upon completion of this course, medical students will receive recognition during graduation.

Evaluation Plan: To ensure accountability, we will track enrollment, number and types of seminars provided, course attendance and delivery of class topics identified in previous surveys of students' interest. To measure satisfaction and to identify areas for improvement, session and annual evaluation surveys will be implemented. Fulfillment of capstone projects will be monitored through project mentors and team evaluation surveys. Evaluation and mastery of core competencies will be assessed through innovation teams' capstone projects delivered at the end of the course. When possible, post-graduation follow-up with track participants will also be conducted to assess participant trajectory, satisfaction and room for improvement.

Potential Impact: The implementation of this course seeks to develop interested current UF COM students into physician-innovators and to collect feedback to inform development of innovation-based programs at other medical schools.

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Implementation of Training in Dermatoscopy in Medical School Curriculum – Isn't It Too Early?

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Idea: The introduction and implementation of dermatoscopy tutorials to medical school curriculum

Need: Increasing harmfulness of UV radiation along with rising incidence of melanoma and nonmelanoma skin cancers [1] expose dermoscopy - a prompt, non-invasive skin examination technique. Performed with the use of dermatoscope, this method facilitates precise visualization of subsurface skin layers – the ones not usually distinctive for the naked eye, therefore leading to a meaningful improvement in the early detection of malignant skin lesions [2]. Although mostly used by professionals, also non-dermatologist physicians, most of all – general practitioners, are significantly more prone to encounter patients with suspicious skin lesions firstly. However, increasing the likelihood of the skin examination by physicians may require changes at the level of student medical education, where clinical examination skills and techniques are ingrained. Still, students' education concerning the skin examination protocol is limited and traditionally lecture-based. The introduction and implementation of basic dermatoscopy tutorial among fourth year medical students is hoped to improve the likelihood of this technique utilization in further clinical practice, regardless the future specialisation. Therefore, improvement in diagnostic accuracy for melanoma as well as decrease in the number of unnecessary excisions of benign lesions are hoped to be observed, in the end, resulting in overall decrease in the number of advanced skin cancer cases and deaths due to skin malignancies [3].

Methods: Basic dermatoscopy tutorials for skin examination followed by the delivery of dermatoscopes for self-usage, will be implemented, first of all, among the fourth year medical students at the Warsaw Medical University, as an addition to the dermatology classes curriculum. Dermatology classes curriculum involves lectures, concerning a wide range of dermatological conditions, presented with the comments of professionals with broad clinical experience. Students are also required to examine extensive array of cases presented in the university hospital. Thanks to this innovative project, participants will be having at the same time the possibility to observe the patients' skin lesions with the aid of dermatoscope, which is hoped to broaden their clinical experience and increase the chance of using this instrument it in their future clinical practice. Therefore improving at the same time the detectability of skin cancers.

Evaluation Plan: One pre-interventional and two post-interventional questionnaires are planned to be utilized in order to assess the efficacy of the intervention. Pre-interventional questionnaire will investigate factors, which might increase the students' interest into dermatoscopy e.g. whether the participant has had any prior exposure to dermatoscopy examination, what is the career interest and what is the general point of view of the participant on the usefulness of dermatoscopy in clinical practice, using a rating scale from 1 to 5. One of the postinterventional questionnaires will be designed to evaluate the practical dermoscopy skills after introduced dermoscopy tutorials, consisting of 10 dermatoscopic pictures of skin lesions with one correct answer. The last questionnaire is intended to estimate the satisfaction from the dermatoscopy practical classes, whether the implementation of dermatoscopes has contributed to expand the students' dermatological knowledge, using rating scale from 1 to 5.

Potential Impact: This project is hoped to increase the dermatoscopy utilization in everyday clinical practice, leading to an improvement in diagnostic accuracy for melanoma and other skin cancers and resulting in overall decrease in the number of advanced skin malignancies cases and associated deaths.

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Incorporating the ACGME Milestones for Emergency Medicine Training into a Medical Student Elective

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Idea: Creating an elective that allows medical students to achieve a Level 1 competency in all 23 ACGME Emergency Medicine milestones.

Need: Studies of incoming emergency medicine (EM) interns have found that many fall short of a Level 1 in the 23 ACGME milestones, especially patient disposition, pain management, multitasking, and ultrasound. In one study, less than 75% of EM interns achieved a Level 1 in all milestones. Additionally, it has been shown that early integration and longitudinal development can facilitate medical student understanding of complex subjects such as ultrasound. In order to prepare EM-bound medical students to achieve a Level 1 in all milestones, we launched the UCI EM Curriculum, the first of its kind. This longitudinal curriculum is integrated into all four years of medical school and will address all 23 milestones through a series of educational workshops and advising events to ensure graduating fourth-year medical students have attained a Level 1 prior to entering residency.

Methods: The curriculum will focus on the EM-bound medical students at the University of California, Irvine School of Medicine. This curriculum will be split into two phases. Phase 1 is designed for first- and second-year medical students, tailored to their level of knowledge in their preclinical training. Sessions include introduction to the field of emergency medicine, various advising and research opportunities, and workshops on vascular access, airway management and simulation. Phase 2 is designed for third- and fourth-year medical students and focuses on integrating basic science knowledge with real-world situations and honing history taking and physical exam skills. An anatomy laboratory session will be offered to practice advanced EM procedures such as thoracotomy, chest tube placement, and intubation on fresh tissue cadavers. An eight-hour boot camp will be offered prior to graduation to practice and refresh skills prior to entering residency. Medical students participating in the curriculum will be able to meet milestones in various ways through participation in different events and will additionally be able to track the milestones they meet online. Attendance to each session will be recorded over the four years of medical school. A certificate and transcript notation will be awarded to graduating fourth-year medical students who have achieved a Level 1 competency in all 23 milestones. To supplement the curriculum, we created an iBook to guide students through the elective.

Evaluation Plan: Prior to each event, an attendance sheet is sent out to all potential organizers and participants. On this sheet, the specific milestones that the event addresses are explicitly stated. After the conclusion of each event, feedback forms will be sent out to all organizers and participants. These forms are designed to assess the overall experience at the session and whether it successfully achieved the stated milestones. The elective leadership will meet every two months to review the feedback forms and make notes on adjustments that are to be made to future events and to the elective in the following year. All events and leadership meetings will have faculty advisers in attendance who are well-versed in the ACGME milestones and will provide their own feedback as well.

Potential Impact: We created an elective that allows EM-bound medical students to familiarize themselves with and achieve a Level 1 competency in all 23 ACGME milestones prior to graduation. The implementation of an elective such as this one may help to improve the current competency seen among EM interns.

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Evaluating the Use of Educational Technology in Medical School Education

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Problem Statement: What is the current state of educational technology in medical school education and what does the future hold?

Rationale: Medical programs across the United States (US) are increasingly structuring their curricula with technology at the core. To facilitate this, medical schools may create innovative educational technology divisions specifically designed to develop, operate, and analyze the efficacy of these resources. As this is a new frontier in medical education, no current standard exists as to the structure of these educational technology divisions and their roles. This study aims to analyze the current state of educational technology in allopathic US medical schools by evaluating the prevalence of educational technology divisions, assessing the credentials of the personnel leading these divisions, and examining how these divisions are structured with an emphasis on the number of personnel allocated. This study is important as it provides those involved in the integration of technology in medical education with a snapshot of the current state of the field is and where it may be headed.

Methods: An extensive online search was conducted from March to April 2019 and repeated by each of the three authors. This online search included: finding and exploring the website of each of the 147 allopathic US medical schools to identify the presence or absence of an educational technology division or equivalent, the job title of the individual who leads it, their credentials, and the number of personnel in the division. The contact information of the division leader and link to the program website were noted as well. This data was compiled and analyzed in Google Spreadsheet.

Results: Of the 147 allopathic US medical schools, 91 (61.9%) have an educational technology division or equivalent. The most commonly held job title was “Director of Educational Technology” (11/91, 12.1%). Educational technology division leadership had the following credentials: 13 PhD’s (14.3%), 9 MDs (9.9%), and 69 non-physicians (75.8%). Only 15 (16.5%) division leaders had specialized training in education including 9 (9.9%) with a M.Ed. degree and 4 (4.4%) with an EdD. The average number of personnel in each educational technology department was 7.9 with a high of 45 and a low of 1.

Potential Impact: As medical schools integrate technology in their curricula, it is imperative to form teams with the proper personnel. This study was the first to reveal the current state of educational technology in medical education and just how differently each program is handling this new educational frontier.

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The IT Factor: A Comprehensive Enrichment Program to Boost Family Medicine In-Training Exam Scores

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Problem Statement: Emanate Health Family Medicine residents are not achieving the In-Training Examination's national mean score based on post-graduate year level.

Rationale: The American Board of Family Medicine's (ABFM) In-Training Examination (ITE) is a required annual examination for Family Medicine residents nationwide. Prior studies have examined the predictive validity of the ABFM's ITE with regard to predicting outcomes on the ABFM certification examination and found that the ITE is a useful predictor for future ITE scores and for the initial certification examination performance. A score of 400 in the ITE has an associated 50% predictive rate for passing the initial ABFM certification. The Emanate Health Family Medicine Residency Program opened in 2017 and a majority of our residents did not meet the minimum threshold score of 400 nor the expected national mean score for their level of training. Residents who do not have a systematic approach to preparing for the ITE may score poorly, potentially adversely affecting their future ITE scores and their likelihood to successfully pass the initial board certification exam post-graduation.

Methods: In 2017 and 2018, Emanate Health Family Medicine residents who did not meet minimum score of 400 were assigned to participate in a paced and structured one year enrichment program with the goal of boosting their subsequent ITE scores. The residents were either required to complete the three previous years' worth of in-training examinations, each consisting of 240 questions per quarter or to answer 200 questions from the American Academy of Family Physicians' (AAFP) free online board review questions on a quarterly basis. Residents in the enrichment cohort were expected to submit proof of completion (print out) during March, June and September of 2018 and 2019 following the fall administration of the ITE in 2017 and 2018 respectively. The intervention methods were accessible and either free or low cost, consisting of the cost of a resident membership in the American Academy of Family Physicians (AAFP). Residents were monitored every three months to ensure that they were meeting the requirements of the enrichment program and scores for the subsequent ITE in 2018 were analyzed for improvement patterns. The scores for the 2019 will be analyzed as well as resident and faculty attitudes towards the intervention.

Results: Preliminary data demonstrated that the residents who underwent the enrichment program had a significant improvement in their subsequent ITE score by a minimum of 30 points, and at times the residents in the intervention group surpassed the scores of residents who did not engage in the enrichment process because they had met the minimum threshold score of 400 the previous year.

Potential Impact: Residency programs may benefit from having a structured plan to boost resident ITE scores. Further studies should explore whether such interventions should be applied to all residents within a program or to those who do not meet a threshold ITE score.

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Evaluation of a Language Translation App in an Undergraduate Medical Communication Class

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Problem Statement: Language barriers pose a challenge and may lead to less thorough care. Language translation apps may offer a helpful compromise in acute situations.

Rationale: Many countries experience a growing population of non-natives, with people sometimes barely speaking the language. This is also reflected in a high proportion of patients not being able to express themselves well enough. These patients have shown to be at high risk for delayed or insufficient medical care. Human translators are considered gold-standard and recommended in several national guidelines. However, they are not always easily available and digital options may pose a valid alternative [1]. Students at the Medical Faculty Tuebingen expressed the wish for specific training in communication with non-German-speaking patients. We incorporated a respective training integrating a language translation app (LTA). We aligned the course along competencies defined in the German national catalogue of learning objectives [2]. Training was based on the principles of deliberate practice and feedback as key elements of simulated settings [3].

Methods: The intervention included second-year medical students within their mandatory communication class. The session lasted 90min, was taught by experienced teachers from the Department of Psychosomatics, and took place in the faculty's skills lab. The intervention consisted of four elements: 1) interactive input on HPI assessment and the topic of how to communicate with patients who can't speak German properly (NGSP), 2) simulated encounter with standardised patient (SP) depicting a young Syrian NGSP presenting with an acute onset of vertigo at ER in the middle of the night using the LTA iTranslate as supportive tool, 3) debriefing including peer-, SP- and expert feedback on the performance, and 4) interactive discussion on the experience. After teaching, students filled in a questionnaire rating the LTA along six dimensions (helpful, intuitive, informative, accurate, recommendable, desirable) on a 7-point-Likert scale each ("1 = don't agree at all" to "7 = completely agree"). Additionally, there was free text for the following items: i) general impression of the scenario, ii) benefit of the app, iii) risks of the app, iv) suggestions for improvement/additional features. Also, they rated the teaching via the regular course evaluation programme. For quantitative data means and standard deviations were calculated using SPSS. Free text was analysed based on inductive evaluation using Excel.

Results: N = 76 out of 111 (68.5%) students participated, n = 45 were female (59.2%), age range 17 to 40 years (M = 20.7 ± 3.3). The internal consistency of the Likert scaled items was satisfying with $\alpha = .86$. Ratings showed average values for helpful (M = 3.45 ± 1.79), recommendable (3.33 ± 1.65) and desirable (M = 3.57 ± 1.85). They were a bit stronger for intuitive (M = 4.57 ± 1.74) and informative (M = 4.53 ± 1.95). The only below-average item was accurate (2.38 ± 1.36). Analysis of the course evaluation showed that students appreciated the topic and generally liked the idea of including an app into teaching. They also acknowledge to practice with an SP in a protected environment receiving multi-sourced feedback afterwards. However, they complained about a missing link to other learning content and demanded a better introduction to the topic including practice with an SP plus a simulated human translator first. Free-text analysis revealed several concerns about translation errors and the potential of making wrong/harmful diagnostic decisions in due course. They also feared a loss of empathy due to the disrupted communication. Students additionally raised concerns on data protection and technical reliability. On the other hand, they appreciated its cost-effective usefulness in certain situations as a second-best option when the gold standard is not available. They expressed the wish for a more medical-specific vocabulary and even pictures to help get all information necessary.

Potential Impact: Implementation of LTA in communication classes may offer multi-facet possibilities to reflect upon changes in the physician-patient relationship with existing language barriers in general and when using digital devices in particular. But it needs to be embedded in a meaningful context.

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Textbook Use Compared to External Resource Use in a Pre-Clinical U.S. Medical School Curriculum

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Problem Statement: Identify what resources students are using during the pre-clinical years, and if there is any correlation to academic performance or confidence.

Rationale: With the significant shift in medical education from textbooks as a primary study tool to technology and medical applications, the number of educational tools has increased and medical students are finding themselves using more electronic sources of information throughout their clinical years [3]. However, information is lacking regarding the preclinical years. Textbooks are assigned as primary resources in medical schools across the country, with numerous stakeholders in preclinical medical education, providing innovative ways to learn the same material traditional textbooks offer. The need to identify what resources students are using to supplement their preclinical studies is imperative for the future of medical education.

Methods: Data was collected through an anonymous Google survey consisting of questions for each of the following subjects: anatomy, physiology, pathology, microbiology, and pharmacology. Confidence level was scaled on a 0-100% scale, self-reported by students. Each student responded to textbook use using the predetermined scale of: most of the time, some of the time, rarely, and never to determine use. Respondents were first and second year medical students at Burrell College of Osteopathic Medicine. There were approximately 160 first year medical students and 150 second year medical students at the time of this survey. After presentations to each class about the research project and scope of work, 22% of the student body agreed to participate, a total of 69 voluntary responses were collected, 65 of which were used. 48% of respondents were OMS 1 and 52% of respondents were OMS 2. Four respondents were excluded due to user error inputting their identification number used or an incomplete survey. Each participant was given a pre-designated identification number, which was used to ensure that the study remained blind. Data was then analyzed with correlation statistics using the program Excel.

Results: The primary resources used in every subject were all external resources. However, there was no significant correlation between textbook use and confidence levels in all surveyed subjects. Textbooks were among the least used resources by the students in this study in every subject with the exception of pathology. Course lectures was the top study material used in every subject. With medical education changing and students not using textbooks as their primary resource there is a need for further discussion and examination of the utility of textbooks in medical education, as well as the implications of students not using textbooks for medical education.

Potential Impact: Educators face more challenges, and the rigor of medical school drives students to find resources to adapt their studies to ensure their success. We suggest further research as well as a balanced approach of a few selected resources that faculty can vet, in conjunction with textbooks in the future.

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Theoretical Framework for an Open-Access, Graph-Based Curriculum in Medical Education

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Idea: Medical students will learn pre-clinical skills through a novel digital tool, moving towards an alternative preparation for clinical education.

Need: Standardized testing on the USMLE Step 1 exam has been shown to correlate with parental income and non-minority status [1]. Medical students and residents rely heavily on self-teaching through the use of large subscription question banks (Q-banks) to prepare for license and board examinations [2]. No Q-banks allow long-term or refresher access to the material and the feedback about strengths and weaknesses is marginal and not actionable given the limited number of questions per subtopic. In its most simple application, the graph-based curriculum provides a free and adaptive tool for test prep; in its ideal future state our tool opens the door to reevaluating the tradition of pre-clinical education and offers an opportunity to reduce student debt and consequently increase the proportion of 1) low socioeconomic status students pursuing a career in medicine and 2) students aspiring to critically needed primary care specialties.

Methods: Graph database architectures (graphs) allow for the efficient extraction and analysis of highly complex relational data that is central in anatomy. Most notably, graphs are implemented to easily compare large numbers of users and their consumption to create recommendation generation engines and to identify connectors at the center of social networks. The ability to analyze properties of objects (nodes) and their relationships (edges) to other objects gives graphs a distinct computational and query complexity advantage over tabular (traditional SQL) and document (NoSQL) database architecture when extracting highly-networked and diverse data. The initial dataset used is the open-source Foundational Model of Anatomy (FMA) version 4.10/0 in web ontology language (OWL) format. Technology stack includes Python3, Flask, Neo4j, and CYPHER. Using these tools, we have built a publicly available, graph-based curriculum (GBC) for anatomy. With this, we demonstrate how to consume the GBC using a question generation engine (QGE) with the potential to create complex anatomy questions for self-study.

Evaluation Plan: Our proof-of-concept (POC) for a multiple-choice question generation engine demonstrates the power of applying graph database search tools to ontology datasets in what we call a graph-based curriculum (GBC). Extension of the POC to foster learning through evaluation, feedback, and unbounded repetition can be accomplished using well-established technical tools and the development of web ontology datasets in medicine. Initial question-generation application will be applied to the M1 anatomy course at a medical school in Chicago and be freely available online. The educational content of different question formats will be evaluated by voluntary survey. For M1 students engaging with the POC, student engagement and retention over the course of an academic term could be compared against classroom performance.

Potential Impact: Building this preclinical open-source GBC results in a free, accessible, and easily-translatable tool to combat inequity in health education and prepare students for clinical education. Generalization of this framework could provide focused education to a broad audience for any topic.

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Use of a Mobile Gaming-Platform to Improve ECG Interpretation and Triage Skills of MS4 Students

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Idea: Using a mobile app (ECG Stampede) to build practical clinical ECG interpretation and triage skills in MS4 students in an Emergency Medicine Clerkship.

Need: Electrocardiography (ECG) interpretation is a crucial skill throughout medicine including emergency medicine, where identifying and treating pathology using ECGs must be done rapidly, and awaiting expert confirmation is not an option. Medical Students in US schools have low rates of accuracy of interpretation, and this is further reflected in poor performance of ECG interpretation skills (mean scores 35-57%) on assessments at the beginning of residency [1,2]. The current paradigms for teaching ECG interpretation in medical schools appear ineffective. Prior studies have shown that use of asynchronous mobile app-based resources can improve the practice of ECG interpretation, as evidenced by improved test scores and confidence ratings on a Likert scale [3]. As such, we propose a novel ECG curriculum for Fourth Year Medical students that will utilize a variety of modalities that include a focused classroom session along with asynchronous usage of a gaming platform to supplement real-world/ case-based experiences. Prior studies have shown that online practice resources from a mobile platform are easily accessible and fit millennial learning styles as well as incorporate into clinical students' busy schedules [3]. As such, the use of the mobile app ECG Stampede could assist in improving MS4's knowledge through practice with real-time feedback on their ECG interpretation and triage skills (relating to both ACGME core competencies of medical knowledge and PBLI).

Methods: Approximately 10-15 Medical students in MS4 emergency medicine clerkship will be enrolled monthly for 6 months (total n=60-90). The innovation will be incorporated into a 4-week Emergency Medicine Elective, with 2.5 hours of total class time, plus an unspecified amount of gaming time. Students will take a pre-test, followed by an interactive session on basic ECG interpretation and triage methodology. They will then be given access to a Mobile gaming application known as ECG Stampede. The app shows learners rounds of 10 ECGs, to be triaged. Options include activating cardiac catheterization lab for STEMI, bedding the patient immediately, making the patient next in line for a bed, or returning the patient to the waiting room. The students will have access to this app for the remainder of the 4-week rotation. Usage of the app will supplement the standard case-based experiences they will get during their time in the emergency room. They will get weekly reminders about using the app. The purpose of this innovation is to help MS4 students gain competence in ECG interpretation, as shown in a pre and posttest. A unique identifier will be assigned to each study participant to link their pre- and post-test, and app usage data. At the end of the four-weeks a debrief and post-test session will be held. Students will have the opportunities to share their experiences with the app and how they were able to utilize their growing skills in ECG interpretation during the rotation.

Evaluation Plan: App usage will be measured via the application Screentime, and subsequently self-reported in terms of minutes/ hours of app use per week by the students. Evaluation of participant learning will be performed using change in pre-test/ post-test scores. Evaluation of participant reaction will be performed a) with a standard session evaluation form for the initial session and b) using a self-reported enjoyment of the app and ease of use form that will also include questions about prior relevant experience that might impact app usage or enjoyment. Student behavior changes will be garnered primarily from the stories that students share in their final end-of-rotation session. In order to keep their participation in this experiment separate from their rotation assessment, there will be no linkage made to clerkship performance.

Potential Impact: If our project is effective it would support the innovative approach of using mobile apps to help clinical students gain practical medical skills that are generalizable across sites and specialties.

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Improving Medical Residents and Students Case Log Accuracy and Efficiency via an EMR-Integrated App

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Idea: A case log management application accessible directly within patient charts in the EMR system and with automatic data-population capabilities.

Need: Medical residents and medical students are required to track their clinical experiences via logging cases or procedures in which they have participated into case log systems, as Accreditation Council for Graduate Medical Education (ACGME) and Liaison Committee on Medical Education (LCME) respectively mandate trainees' experiences to be monitored by their educational institutions. As current Residency Management Systems (RMS) and case log systems are not integrated with Electronic Medical Record (EMR) systems, trainees need to manually enter numerous discrete-field data (procedure codes, diagnosis codes, encounter date, patient type, Attending's name) per clinical case into the standalone logging systems. This process is time-consuming and prone to data-entry errors. As a result, procedures reportedly were under-logged by trainees with only 81.3% of cases logged, 51.4% of trainees had backlogs of 3 months or more, and only 52.8% of the cases logged were entered correctly when compared to billing records. Medical residents benefit from maintaining accurate case logs to meet minimum requirements for completing residency. Residency program directors and medical school administrators benefit from accurate data to ensure their educational programs meet educational objectives. The proposed idea encourages trainees to complete case logs while completing the patient chart in the EMR and leads to improved accuracy of case logs.

Methods: EMR systems have data interoperability interfaces to enable institution-approved, third-party applications and systems to transfer data with the EMR systems. Fast Healthcare Interoperability Resources (FHIR) is a standard for electronically exchanging healthcare information supported by EMR systems. SMART (Substitutable Medical Apps and Reusable Technology) is a platform that enables applications developed to be embeddable within EMR systems and provides a seamless end-user experience. Using SMART on FHIR, an application can be developed to enable trainees to complete their case logs while completing patient charting. As an example, an EMR system user interface has tabs to navigate within a patient's chart, such as Patient Demographics, Clinical Notes, Medications, and Diagnoses. With the developed application deployed to an institution's EMR system, a trainee would click on an additional tab now available within the patient's chart in the EMR to log the case. Relevant data from the patient's chart would be automatically populated into the case log interface within the EMR, due to patient-context awareness from utilizing SMART on FHIR technology; the application would utilize the Patient, Encounter, Condition, and Procedure FHIR resources. The trainee would then fill any remaining fields required to complete the case log. As far as the author is aware, this is the first-ever description of an EMR-integrated, user-interactive case logging system for graduate medical education.

Evaluation Plan: Prior to deployment of the SMART case logging application to the EMR system, medical residents and medical students would be asked to complete a survey to assess perception of their case logging experiences. An analysis of case log data accuracy and log counts would be completed. If the case logging system have time-stamping capability of when a case entry was started to when it was submitted or have mouse-tracking capabilities, an analysis would additionally be completed to determine average time a trainee takes to log a case using the old process and the average number of mouse-clicks required to log a case. Post-deployment of the application and after trainees are familiar with the new process for logging cases, the same survey and metrics will be measured. Pre- and post-deployment results would be compared to evaluate this proposed idea's impact.

Potential Impact: Medical residents and students will have a better experience logging cases, leading to increased case log accuracy, decreased frustration of the logging process, and decreased time to log cases. Administrators will have prompt, accurate statistics to allocate appropriate opportunities to trainees.

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Telepsychiatry: Expanding Mental Health Services through Synchronous Video-Conferencing Technology

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Idea: A self-designed 4-week curriculum to improve a medical student's competency in Systems-Based Knowledge of mental health care delivery.

Need: According the National Institute of Mental Health, only half of 45 million Americans suffering from mental illness receive treatment. This is largely in part due to increased demand for services that far exceeds supply. For example, 20, 470 will join the psychiatric workforce by 2025, yet 20,500 will also leave, netting an overall decrease. Moreover, there is an imbalance in the distribution of existing providers, wherein some places like rural Idaho have such extreme shortage that there is only 1 psychiatrist per 100,000 people. Telepsychiatry is a growing service delivery model endorsed by the American Psychiatric Association (APA) that has the potential to expand services in mental health workforce shortage areas. Current Graduate Medical Education (GME) guidelines, however, do not include telepsychiatry as a required clinical experience in general psychiatry residency training so it is important that future providers, such as medical students and interns, are exposed early in training to understand its potential to radically transform mental health care delivery.

Methods: For this project, I outlined activities along two overarching themes. First, to establish baseline knowledge about the current organization of mental health services in the United States, and appraise evidence regarding the efficacy of telepsychiatry. Second, to gain knowledge and clinical skills as a future telepsychiatry provider. For theme #1, I: a) accessed governmental and non-governmental databases to analyze population level mental health delivery data such as services offered, types of providers, funding sources, and service delivery settings b) identified legislation related to delivery of psychiatric services at the local and national levels, and c) appraised published evidence regarding the efficacy of telepsychiatry compared to in-person care. For theme #2, I: a) completed the APA Telepsychiatry Toolkit, b) reviewed APA and American Telemedicine Association's best practice guidelines, c) attended technology-focused session during the annual APA conference, d) conducted interviews among telepsychiatry providers, academics, and healthcare administrators, and e) observed telepsychiatry sessions as if I were a patient receiving services.

Evaluation Plan: To demonstrate progress of my competency in Systems-Based Practice, I assessed my advancement in two core Entrustable Professional Activities (EPAs) for entering residency as described by the American Association of Medical Colleges using the Chen entrustment scale. For both EPA 13 "identify system failures and contribute to a culture of safety and improvement" and EPA 7 "form clinical questions and retrieve evidence to advance patient care," for example, I rated my current level at 2A because of the need for co-supervision in explaining telepsychiatry' s role in addressing mental health system challenges. Following the project, I advanced my self-rating to 3C as I was able to confidently explain how effective telepsychiatry is compared to current standard of practice with distant supervision.

Potential Impact: Because there are no current guidelines to incorporate a telepsychiatry curriculum for psychiatry residents at the GME level, my self-initiated project can be used as a framework to adopt telepsychiatry in medical training, while at the same time advancing competency in Systems-Based Knowledge.

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Gamifying Introductory Neuroanatomy for Medical Students

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Idea: We plan to develop an app for medical students to learn the basics of neuroanatomy through interactive tutorials and levels in a puzzle game.

Need: As educational tools begin to implement technology more and more, a similar approach must be taken towards medical education. Currently, medical students have access to video resources, flashcard apps, and question banks that can be accessed on portable devices. However, many of these resources are minimally interactive, and can be seen as monotonous or struggle to maintain users' attention consistently. Just as many topics in medicine, such as localizing neuroanatomical lesions, involve critical thinking and problem solving, so too do many puzzle games. By blending aspects of video games with learning, learners can take a more proactive role in learning material, and also feel incentivized to complete tasks or lessons. By developing and using a software program to help gamify neuroanatomy (henceforth referred to as "the program") as an adjunct to traditional materials, learners will take on a more active role in learning. The hope is that students will have a deeper understanding of the material and have better retention over time.

Methods: The program will first have to be developed. The program would have multiple tutorials going over the basics of neuroanatomy, and then asking the learner to complete simple tasks like tracing the courses of certain pathways. Learners will then have "levels" where they will have to draw the location of a lesion given neurological findings. The difficulty of these puzzles would increase as the learners are exposed to more neuroanatomy. In addition, a sandbox mode would allow the learner to draw a lesion in the nervous system, and then see the neurological sequelae of the lesion. These interactive puzzles allow for critical thinking, and the sandbox mode allows to learn by tinkering and experimenting. Preclinical students will be given a short quiz about neuroanatomy three months after completion of their preclinical neurology course. In addition, a survey will be sent out to them about their experiences and perceptions of gamification in education. This will be used as the control group. The following year, students will be offered access to the program as an adjunct to other materials. Three months after completion of their preclinical neurology course, they will be sent a short quiz, as well as be asked how often they used the program while studying. They will also be given a survey about their experiences with the program and their perceptions about gamification in education. They will receive another short neuroanatomy quiz three months after being sent the first quiz.

Evaluation Plan: There are two overall topics that would be investigated-- students' general thoughts regarding gamification of medical education and how helpful this program would be in learning and retaining neuroanatomy. To investigate the former topic, students would complete surveys before and after using the program to collect qualitative data about perceptions of gamification of medical education, barriers and challenges to gamification. These would be broad questions that could help identify qualities of good education games, as well as shortcomings. To investigate how helpful this program is in learning and retaining neuroanatomy, scores on neuroanatomy quizzes sent out to medical students after completion of the preclinical neurology course will be compared between patients who had access to the software and those who did not. Quizzes will be sent out at further time intervals to assess retention of this knowledge.

Potential Impact: By making learning more interactive, students will be more engaged and have a better understanding of neuroanatomy, as well as how lesions affect physical exam and vice-versa. Similar games can be developed to help students learn about different fields, such as cardiology and immunology.

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HeadToToe : Medical Knowlegde Distribution Platform

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Idea: Creating a mobile plateforme intented to provide easy and quick access to validated and high quality medical content.

Need: Clinical Skills (CS), i.e. medical and personal history taking, physical examination and procedural skills, are an important cornerstone in any medical school's curriculum. These skills are taught in parallel to theoretical studies and prepare the medical student to his clinical years. A medical student is expected to be able to examine a large variety of patients and perform a vast number of procedures. Student's CS are usually evaluated and in Switzerland they count for 50% of evaluation criteria at the end of undergraduate curriculum. Like any skill, CS improve with repetition, reason why students rely on references (i.e. documents and videos) in order to prepare themselves for the clinical environment. However, even though a multitude of references do exist, the information is vast and scattered between a large number of sources and finding a high-quality and validated references could be time consuming and frustrating process. Moreover, while searching, students may refer to different sources which may potentially harm the standardization of CS amongst students. This is why we have decided to create a mobile smartphone platform providing quick access to high-quality CS references. After positive evaluation of the platform it was then adapted to the post graduate environment by adding validated clinical decision algorithms useful for clinical rounds for students as well as for residents allowing a continuos use of the platfrom during the pre and post graduate period.

Methods: HeadToToe is a mobile smartphone and tablet platform deveoppled by medical doctors in the Univeristy of Geneva, Switzerland intented to provide quick acces to high quality and validated medical content for the pre and post graduate level. Operational since 2015, the platform provides the possibility for educators in the faculty of medicine as well as for chief physcicians in the hospital to distribute in a centralized fashion, through a mobile app and a central server, high quality validated and up-to-date medical refernces (clinical skills videos and documents, local and international guidelines, textbooks, basic lab vlues, important scores and more, organised by medical speciality). With this centralized approach, each educator / head of division in the hospital is responsible for his own content as a medical specialist and will provide up-to-date refernces. The users, through the app, will have access to references from all the medical fields thus keeping themselves updated thanks to validated content in different medical fields.As medical evidence is rapidly changing, each content item has it's own "Half life" defined by it's creator providing a visible creation and expiration date for each item. The responsibile of the expiring content will then be sollicited automatically torwards the end of the "Half-life" to either update or delete the expiring content, providing a constant up-to-date plateforme. Users are notified then about updated content.

Evaluation Plan: The evaluation of the use of the platform is performed in two manners: 1) Surveys are sent to the users (students and doctors) asking about the usfulness of the application, the usefulness of each type of content (documents,videos, lab values), user experience (User interface, installation process, general usefulness of the platform) and questions about general and specific needs for future versions. 2) Usage Statistics are gathered anonymously and automatically through Yahoo Flurry SDK. Statistics gathering is targeted about, User affiliation (Students vs Doctors), number of times each content was viewed (Giving potential information about content quality as well as user's needs), which kind of content was viewed (videos vs documents), number of users per days per affiliation, number of sessions per user per day, time of day (day vs night shifts), time of year (increased usage before exam periods for example), user navigation path (how long it take to found what is needed).

Potential Impact: We believe the platform provides a simple but performant tool to provide easy acces to validated and up-to-date medical content and provide standardisation for clinical practice in a institutions as it is the educators and specilists of each institution who are responsible for their content.

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Prioritizing the Clinical Pertinence of Facts with a Gaming App for Preclinical Medical Students

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Idea: A gardening-themed gaming app designed to help MS1's and MS2's to better recall and prioritize facts pertinent to making clinical decisions.

Need: Perceived irrelevance of memorizing facts for the sake of "studying for the test" contributes to the decrease in morale and increased cognitive fatigue in pre-clinical years [1]. In order to improve medical students' motivation in transitioning from theory in pre-clinicals to real life in rotations, students must be exposed to an integrated curriculum emphasizing clinically-pertinent facts. Pertinence is the degree at which a particular medical fact is linked with improved medical care (the bigger picture). Unfortunately, institutions have to dedicate their resources to teaching less pertinent minutiae for the Board Exams [2]. Pertinent facts may get lost, as they are mixed in with less pertinent ones. Since students are particularly vulnerable (due to the time and energy demands of their education), they do not have the resources to identify and keep track of what is clinically important [3]. A free-response student-sentiment survey demonstrated the desire for better organization of previously-learned and to be learned facts into the bigger picture of real life medicine. Our app, through engaging gameplay, will help students more consistently organize and prioritize clinically-pertinent facts as they are progressively taught during their own preclinical education. It will also develop their own sense of pertinence for growing their own knowledge that they will acquire throughout their careers.

Methods: As outlined by IRB M-2219 (Lim et.al.), a self-enrolled sample of 20 1st- and 2nd-year preclinical students will be providing feedback on how efficiently our app helps organize their clinical understanding of their curriculum over the course of two semesters. Our app leverages the following: 1) Acquiring Component Skills: Flashcards contain facts that will build a cognitive mind-map of the interconnectedness of anatomy, molecules, diseases, and treatments. Through a computational algorithm, flashcards are assigned a pertinence rank based on their connectivity with clinically-pertinent states and conditions. 2) Goal-Oriented Learning: Students will engage with flashcards and sorting games that are specific to the curriculum of their school. Each activity will be offered in the school exam they appear in. Progression through these activities will also award points students can spend on unlocking further activities. Points awarded are proportional to the activity's pertinence rank. 3) Use of Prior Knowledge: Each fact is indexed by emoji's, which represent easily-recognizable categories of medical expertise. These categories are modeled after the board categories on the USMLE and COMLEX. Students can use the emoji's to access activities to review previously-learned facts in a time-efficient manner. 4) Self-Directed Learning: Students can rank the activities based on their proficiency and see how much of a certain category they were able to cover.

Evaluation Plan: After each module exam, participating students will fill out a survey assessing the app's effectiveness to help them recall and understand how facts they learn relates to the big picture. Free responses will inform the app creators on how to improve the user interface, as well as point out any errors in the presented content. Students self-report the time they use the app and the amount of time they spend studying. Live feedback can also be given through a form available through the app to request content changes, troubleshooting, and additions. One-on-one student feedback through interviews will assess their ability to recall the important decision-making branch points given a single clinical presentation that is emphasized during the point of their curriculum. Computer-generated pertinence rankings of material will be compared with the amount of coverage it receives in the school's curriculum. Faculty feedback on the rankings will also be collected.

Potential Impact: Our app will help improve student morale and performance throughout the first 2 years of medical school. Seeing how facts fit in the big picture early in their careers will motivate them to learn and identify facts that will help them deliver more targeted and high-value patient care.

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Digitizing Deliberate Practice:
Using Automated Mobile Evaluations for Emergency Medicine Trainees

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Idea: A mobile platform for automated on-shift evaluations targeted to learners to enhance feedback and promote deliberate practice during residency.

Need: Ericsson's theory of deliberate practice suggests that high-quality feedback is a "fundamental prerequisite for improvement of performance" [1]. Policies set forth by the governing body of resident medical training, the ACGME, include the requirement that residents receive feedback as part of a residency training program. However, the actual means by which this can be achieved are not specifically mandated and doing so effectively has been challenging across many specialties [2]. Emergency Medicine trainees face a unique set of challenges when it comes to receiving formative feedback as they work with many different faculty with significant variation in frequency and more intense workplace time constraints. A commonly-used approach, the "semi-annual evaluation" such as what is currently in place at LAC+USC may not be able to adequately meet the educational ideals that feedback be "early, frequent and targeted" to be most effective. Mobile technologies provide new and enhanced functionalities and opportunities to assess learning, such as personalization and adaptivity, context-awareness and ubiquity and interactivity [3]. We plan to implement a mobile-based evaluation platform leveraging these principles to address some of the shortcomings of traditional resident evaluations in order improve the timeliness and effectiveness of evaluations in order to provide valuable formative feedback to medical trainees in line with Ericsson's theory of deliberate practice [1].

Methods: We propose to pilot a novel digital evaluation system with a subset of ten faculty at our Emergency Medicine residency which currently has 78 residents. The bespoke platform uses faculty and resident online schedules to automatically generate evaluations and push them in real-time to users' devices to be completed and discussed "on-shift". Evaluations are targeted to a specific milestone determined by the software's algorithm which incorporates both the program's pre-determined learning priorities and the individual learner's needs, such as areas identified as needing improvement or that have been under-evaluated in the past. Feedback data will be accessible to the learners on an ongoing basis via a web-based interface to promote consistent reflection and self-directed learning. Faculty participants all have previous experience in education and resident evaluation. Initial settings for the algorithm that governs milestone selection will be determined by residency leadership including the PD and APDs based on program aims. Participants will be trained on usage of the app. Evaluations will be generated and collected prospectively over a three-month trial period. After this initial period the settings for the algorithm will be re-evaluated and adjusted if necessary. Also at this time, residents will be given access to ongoing reporting of their evaluations. Data collection will end after an additional three-month period to coincide with the program's semi-annual CCC meeting.

Evaluation Plan: Evaluation will focus on measuring changes in timeliness of feedback and targeting of milestones. The timing and frequency of evaluation completion as well as residents accessing their evaluation data will be reported and compared to self-reports regarding the prior evaluation system. Feasibility metrics such as evaluation completion rates, number of generated evaluations per resident and coverage of milestones will be analyzed and reported using descriptive statistics. Milestone coverage data will be compared to data from the CCC session that took place prior to implementation of the new evaluation system. The evaluation data will also be analyzed for trends in milestone acquisition over time as well as in relation to PGY. Both residents and faculty will also complete pre and post-intervention surveys to assess user reaction data.

Potential Impact: Milestone-based feedback is the ACGME-mandated expectation but can be very difficult to actually implement. This is a global problem among all training programs though this specific application does have some unique features targeted to EM and this intervention may benefit both faculty and learners.

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Assessing the Impact of the Keck Online Learning Initiative on its Content Creators and Editors

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Idea: To evaluate the academic and non-academic benefits for MS2 students constructing curriculum-based, student-generated study sets for MS1 students.

Need: The Keck Online Learning Initiative (KOLI) is a student-run organization designed to create curriculum-based memorization aid programs (MAPs) for other medical students. To date, we have only evaluated the effectiveness of MAPs on their target demographic: first year medical students (MS1s) and their academic performance. However, overlooked are the academic and non-academic outcomes of MAP-creating second year students (MS2s). Literature shows that making flashcards can be even more helpful than using flashcards [1,2]. Additionally, peer tutoring has been demonstrated to boost student-teacher self-confidence and promote student leadership [3]. Consequently, through surveys and focus groups, we aim to study academic outcomes of creating MAPs by investigating the organ system exam and USMLE STEP 1 scores of MAP-creating MS2s vs control MS2. We also hope to study non-academic outcomes such as self-reported leadership, self-efficacy, and feelings of preparedness.

Methods: Study Sample and Design The study group consists of ~25 second-year medical students (MS2s) that work as content creators and editors within KOLI, compared to a control group of ~25 MS2 students that are not involved in KOLI. The content creators and editors spend roughly 30 hours in the summer between first and second year gathering, synthesizing and reviewing information from lectures to develop 20-70 flashcards per lecture, with feedback from the KOLI team and lecturer input. Tools and Procedures To assess the impact of participation in KOLI, we plan to utilize academic and non-academic parameters. Academic outcomes will be evaluated by comparing: 1) the change in system exam scores between first year and second year within MS2 content-creators, 2) USMLE STEP 1 scores between content-creators vs. control MS2s not participating in the program. Non-academic outcomes will be evaluated using Likert-scale survey items to obtain measures of self-reported leadership, self-efficacy, and feeling of preparedness for USMLE Step 1. Survey questions will include published and validated items or scales [3]. Academic performance data will be de-identified by the Keck administration prior to analysis and surveys will be administered anonymously. Additionally, we plan to conduct a focus group among content creators. The quantitative academic data will be analyzed using a paired two-sample t-test, and the survey data will be analyzed using a Mann-Whitney U test.

Evaluation Plan: Preliminary results gathered using informal interviews showed an improvement in self-reported measures of exam preparedness, self-efficacy, and leadership skills for KOLI content creators (CCs) and editors (CEs), when compared to their peers. These initial findings will be verified using surveys and focus groups. Input from preliminary interviews suggests that participation in KOLI as a content creator/editor provides “an increased sense of belonging and contribution to the Keck community”, and “an opportunity to mentor the future generation of Keck student doctors”. We hypothesize to see a greater improvement in KOLI CC and CE second year organ-system percentile scores relative to their own first-year percentile scores when compared to non-content creators. Finally, we hypothesize greater self-reported USMLE 1 step scores between KOLI CCs and CEs compared to students who did not participate in the KOLI program when matched by mean medical school system exam scores and MCAT scores.

Potential Impact: Broadening our scope from studying the effects of KOLI on MS1s to include our content creators (MS2s) allows us to assess the impact of constructing KOLI flashcards on MS2 growth. Content creators may report significant improvement in measures of self-efficacy, leadership, and academic performance.

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Effectiveness of a Video Module on Resident and Medical Student Knowledge of Penicillin Allergy

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Idea: Assess the effect of a video education module on Internal Medicine resident and medical student understanding of penicillin allergy.

Need: Ten percent of Americans report a history of penicillin allergy. It is estimated that only 10% of those individuals are truly allergic to penicillin. Individuals with a penicillin allergy experience longer hospital stays and are more likely to receive broad-spectrum antibiotics and experience adverse health outcomes1. Penicillin skin testing and drug challenge are highly effective diagnostic tools for determining whether patients truly have a penicillin allergy. One significant barrier to “de-labeling” individuals of their reported penicillin allergy is lack of physician understanding of penicillin allergy2. Surveys of Internal Medicine physicians show that many would prefer to receive more training and education on topics in Allergy and Immunology.3 We aim to assess resident and medical student knowledge of penicillin allergy and impact of an educational video module.

Methods: Our intervention will focus on a sample of one hundred first-year medical students who have recently completed an Immunology course and one hundred Internal Medicine residents. The intervention will include a short video clip which addresses seven learning objectives on penicillin and general drug allergy. Prior to our intervention, all study participants will complete a short seven-question survey, with each question designed to assess knowledge of one of the seven learning objectives. After the intervention, each study participant will be asked to complete the same survey immediately, and at one month from the time of intervention.

Evaluation Plan: The primary endpoint is the percentage of correct survey answers before and after the intervention. We will evaluate knowledge retention by comparing the percentage of correct survey answers immediately after intervention and at the one-month time point. The secondary endpoint will be to assess whether baseline knowledge prior to the intervention is different between residents and medical students due to their different levels of training. This will be assessed by comparing the percentage of correct answers in the surveys prior to intervention in the resident versus medical student groups. Our preliminary data of 22 baseline surveys completed by Internal Medicine residents show a mean score of 58% correctly answered questions.

Potential Impact: Nine percent of Americans could potentially be “de-labeled” of their penicillin allergy through penicillin testing. Educating future physicians about penicillin allergy could result in less antimicrobial resistance, fewer adverse drug reactions, improved health outcomes and lower healthcare costs.

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Embracing Interactive Technology to Teach Didactic Year Physician Assistant Students

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Idea: Integrate adaptive technology into Anatomy curriculum.

Need: Physician assistant departments do not have the extensive labs, resources and instruction time to teach anatomy like medical schools. With faster computers and large data storage on the cloud, interactive technology has become quite useful and affordable. Interactive technology is algorithm-based systems that take advantage of advanced mathematical formulas and machine learning concepts to adapt specifically to individual learners. At its core, such systems are intended to identify what a student does and doesn't understand, identify and provide content that will help the student learn it, assess again, help again, etc., until some defined learning goal is achieved. One of its greatest potentials is to target instruction at just above the student's ability level (to challenge but not discourage the student) and at the student's specific content needs. A recent study concluded that some adaptive systems were nearly as effective as one-on-one human tutoring.

Methods: Access to the LearnSmart interactive technology will be made available to didactic physician assistant students in the Anatomy course. Lectures using the technology will be given as well as class and after class assignments using the technology.

Evaluation Plan: At the end of the course didactic presentations will be evaluated through review of the student's responses about the course structure and curriculum. Presence of comments/recommendations about the course and usage of interactive online technologies will be reviewed in written feedback from the course. A PA student's survey at the end of the course after implementation will assess perceptions about the effectiveness and learning outcomes from using interactive online tools. End of course student evaluations about course content will be monitored for depth of reflection and for effectiveness of teaching. Student performance will be evaluated against the other cohorts.

Potential Impact: Interactive technology will assist the learner and will provide effective and affordable tools to utilize to improve learning outcomes. Examples are cadaver labs, histology and CT scan, and X-ray imaging labs providing the means to conduct labs without tying up resources.

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A Virtual Patient Game for Musculoskeletal Exam Teaching

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Idea: I propose to use a virtual patient game to teach preclinical medical students about musculoskeletal exam within the context of rheumatologic disease.

Need: Musculoskeletal complaints are the second most common reason for visits to the emergency room or primary care physician after upper respiratory tract complaints [1]. Yet studies have shown medical school students and graduates to be underprepared in musculoskeletal medicine [2, 3]. Many medical students have limited exposure to musculoskeletal medicine, usually via lectures and hands-on practice on standardized patients and peers without musculoskeletal problems rather than in patients with musculoskeletal problems. At Drexel University College of Medicine, 52% of 58 second year students reported feeling confident in their ability to perform a musculoskeletal exam, compared to 86% reporting confidence in their ability to take a history and 95% in their ability to perform a general physical exam. A virtual patient case scenario would give students more training on musculoskeletal exam within the context of a disease process rather than in isolation.

Methods: Second year medical students who have had instruction in both musculoskeletal pathology and physical exam will have access to the game as a supplement to the established curriculum. Students who have completed the game should be able to appropriately manage a patient presenting with subacute elbow pain and swelling. During the game, they will practice differentiating inflammatory, mechanical, and degenerative conditions affecting the elbow using historical clues, view and perform (virtually) an upper extremity musculoskeletal exam, and justify the appropriate next step in management based on their proposed diagnosis. Performance on musculoskeletal exam will be assessed via performance on a school-wide observed structured clinical exam (OSCE) case in the third year (currently being piloted).

Evaluation Plan: Initial feedback on the game will be obtained from focus groups to further refine the case. Repeat testing will focus on learner feedback obtained via surveys on their experiences: how helpful they thought the module was in teaching them about the musculoskeletal exam, and how prepared they felt in assessing a case of joint pain. Finally, I will examine student performance on a standardized patient case of upper extremity joint pain during their third year clinical skills assessment exam and compare it to historical performance on the exam (prior to implementation of the module).

Potential Impact: Games can provide an opportunity for situated learning for students exploring the role of practitioner. I am implementing a game that increases exposure to musculoskeletal exam in rheumatology, a field underrepresented in medical education, to improve understanding of musculoskeletal medicine.

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Online Modules to Improve Emergency Medicine (EM) Residents' and Students' Interpretations of X-Rays

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Idea: Just-in -time online modules for EM residents and EM-bound students to enhance interpretations of musculoskeletal x-rays while "on shift."

Need: Radiology is not taught in a standardized manner in medical schools, and deficiencies in Radiology skills of incoming interns has been noted by residency directors [1]. Rapid and accurate interpretation of diagnostic imaging is critical in patient care, especially in clinical arenas that require real-time interpretation such as the Emergency Department (ED). Assistance from attending Radiologist coverage is variable, often necessitating that the ED provider make treatment decisions based on their own interpretation. This is especially true when it comes to x-ray interpretation. One study at an academic medical center showed a 3% discrepancy in x-ray interpretation between EM physicians and Radiologists, many of which were missed fractures [2]. An informal survey of local residency program leadership revealed a desire to improve skills with respect to radiology interpretation. Online tools have been developed but did not include musculoskeletal images [3]. This educational innovation builds on past initiatives by creating online asynchronous modules. However this project focuses on the neglected area of commonly ordered musculoskeletal x-rays. These modules can be used as "just-in-time" resources anytime, including when learners are on shift.

Methods: The goal of this educational intervention is to improve EM-bound medical student and EM resident competence and confidence with interpretation of commonly ordered musculoskeletal x-rays. The intervention will be as follows: Approximately 5 modules will be created and assessed over the next year covering elbow, wrist, shoulder, knee and ankle x-rays, since these are more challenging to read. Modules are not intended to be comprehensive, but focused so as to aid with "just in time" learning. For each module packet, there will be three elements developed: 1) Online module that walks the learner through the process of interpreting an x-ray of that joint using multiple x-rays; 2) a link to a survey to gather demographic and evaluation data which then takes participants to the quiz; 3) an online quiz that will provide multiple x-rays to interpret. For each module our goal would be to collect 20 surveys and 20 quizzes. Each module will require approximately 10-15 minutes to complete. Each survey will be 5 minutes and each quiz will be approximately 10 minutes. Once available online, modules will continuously be available to learners. Surveys will focus on both learners' satisfaction with the curriculum and changes to learners' perceived confidence with respect to Radiology interpretation. The online platform has a large following of EM providers and routinely sends out reminders of posts via social media.

Evaluation Plan: The evaluation of each module will include multiple methods. 1) We will track traffic to each module, as well as numbers of persons completing each survey and quiz. 2) Interpretation skills will be assessed based on results from the quiz associated with each module. 3) Specific demographic information (level of learner, when initially used the module, (in own time or on shift), confidence prior to and after using the module, and usefulness of module) will be obtained in the survey. Learners will also be asked if they would refer to this resource to others for real time usage. In the first survey taken by any learner they will be given an identification number to use in all modules so that they and we can track their progress. Results of this study will be used to: 1) examine the quality of each module, 2) plan further instruction in this arena for residents in our local program, and 3) to help individual residents build their own learning plans.

Potential Impact: If this intervention is shown to be effective, it will demonstrate focused online modules can be an effective modality at teaching radiology interpretation skills to EM residents and EM-bound students. Implementation of this innovation could easily be generalizable to other specialties.

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I Heard About This Thing On…

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Idea: Interactive curriculum to improve Emergency Medicine residents' ability to assess and incorporate Free Open Access Medical Education into practice.

Need: Free Open Access Medical Education (FOAM) resources are used by the vast majority of emergency medicine (EM) residents either for independent learning or as a part of ACGME-approved Individualized Interactive Instruction [1]. There are commonalities between FOAM and traditional peer-reviewed scholarly articles, yet additional considerations exist that are unique to FOAM. Although there are several validated tools that residents could utilize to assess resource quality, data demonstrate that residents utilize FOAM resources without critically appraising their quality [2]. In fact, a national survey of EM residents demonstrated that over 40% of residents "rarely or never" assess the quality of evidence or review the sources of an educational resource [3]. Faculty in our program have noted concerns related to residents' clinical application of information derived from FOAM resources. Residents often quote FOAM resources but then cannot clearly delineate the underpinning evidence or determine the quality of the clinical recommendations. Residents are likely to continue to learn from these resources, thus there is a need to provide a framework to assess FOAM resources before application into their current and future clinical practice. We propose a curricular intervention to develop residents' ability to assess FOAM resources before clinical application.

Methods: The proposed curriculum for EM residents will consist of two, two-hour sessions four-weeks apart during protected didactics (n=~30). Incorporating learning principles, the interactive curriculum will utilize deliberate practice and reflection on clinical decision-making. The 1st session will situate use of FOAM within lifelong learning, introduce the ALiEM AIR Tool for rating quality of FOAM resources, and train residents on use of the tool. In facilitator-led small-groups, residents will rate 3 FOAM resources with feedback. The 2nd session will have a pre-assignment where each resident will read and critically appraise FOAM resources on four topics with the ALiEM Air tool. During this session, resident pairs will trade resources and appraise their partner's resource. Comparison to a standard will illuminate knowledge and appraisal skills gaps. Part 2 of this session focuses on how to translate FOAM into clinical practice using a four-step "museum tour": 1) Each pair will post their key "clinical pearls" from their resources to a board for that topic. 2) All attendees will be divided into groups to go on the tour. 3) Each group, facilitated by a faculty member, will spend 8-10 minutes at each of the posters discussing how the information presented may impact their practice. 4) Each facilitator will guide their small-group through a structured reflection where residents identify how their evaluation of FOAM resources and practice patterns changed due to the program.

Evaluation Plan: 1) Accountability: Attendance at the sessions will be tracked as will participation in the pre-work assignment. 2) Reaction: Learner reaction will be assessed using a standard session evaluation form to assess the content, instruction and the innovative methods. 3) Learning: In session one, the assessments completed during the deliberate practice phase (three per learner) will be compared to the resources' original ALiEM AIR Score. Assessment in session two will include: the completed resource assessments, the pearls shared by each group during the "museum tour", and the quality of discussion during the guided reflection (as assessed by the faculty facilitators). 4) Behavior: Critical appraisal of FOAM resources and successful translation of FOAM into clinical practice as a result of this intervention will be assessed longitudinally with a post-intervention survey two months after the final session.

Potential Impact: Regardless of specialty, anchoring a healthcare provider's use of FOAM resources in the best-practices for critical appraisal will improve their ability to integrate new knowledge with clinical decision-making, safely evolve practice patterns, and foster lifelong learning.

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Teaching the Ethical Use of Spanish in Medical Training: A Pilot Program

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Problem Statement: Training students to use Spanish within their competency level can encourage ethical practices, and meet the need for more Spanish speaking physicians.

Rationale: Many students entering medical school have some degree of Spanish knowledge, but fluency varies. Students are often asked to communicate with limited English patients (LEPs), even when they have not been formally trained or evaluated. The desire to help can be dangerous if students step beyond their competency level. Conversely, proficient learners may shy away from opportunities to use Spanish when it might be of benefit. Formal training and assessment could play an important role in helping students understand the parameters of their language capacity. Medical Spanish curriculum should emphasize ethical practice surrounding LEPs. We report one approach to medical Spanish curriculum, which includes formal evaluation prior to working with LEPs. We seek to evaluate how formal language evaluation associates with students' self-reported confidence regarding their ability to engage in clinical scenarios with LEPs.

Methods: Spanish Elective: The student-developed longitudinal Spanish elective consisted of self-directed online grammar modules and vocabulary flashcards, 8 in-person sessions, and a capstone experience. The course emphasized ethical use of Spanish consistent with student competency, and best practices working with interpreters. Each session was led by a native Spanish-speaking physician and included time for pre-work review, specialty-specific case scenarios, and a presentation regarding cultural and clinical pearls regarding working with LEPs. Subsequently, students interested in using Spanish with LEPs in clinical experiences were offered language testing at no cost via the Clinician Cultural and Linguistic Assessment (CCLA) administered through ALTA Language Services. Questionnaire: Medical students participated in a survey in which they self-assessed Spanish competency using the Interagency Language Roundtable (ILR) scale, and their level of comfort to engage in scenarios in which they might interact with LEPs, ranging from nonclinical to complex-clinical, based on a previously published survey. Data was collected regarding previous exposure to formal and informal Spanish language instruction and experiences. Those who took the CCLA were sent a follow-up survey, identical to the pre-exam survey. Data analysis: Pre- and post-test questionnaire data, as well as feedback from the Spanish elective, were analyzed.

Results: End of Medical Spanish Elective Survey: 9/15 (60.0%) students who completed the elective responded. Overall course satisfaction was rated 4.8/5.0. Students rated their improvement in ability to speak Spanish a 4.1/5.0, ability to understand Spanish 3.9/5.0, and knowledge of medical vocabulary 4.2/5.0. Students' perceived improvement in understanding how to work with Latino/Hispanic patients was 4.7/5.0. Baseline Survey: 61/94 (64.9%) students responded to the baseline survey. The average age was 26.5 years old, 35 (57.4%) were male, 39 (63.9%) Caucasian, and 51 (85.0%) non-Hispanic. 4 (6.7%) reported their medical Spanish as very good, 10 (16.7%) as good, 13 (27.1%) as fair, and 33 (55.0%) as poor; none reported excellent proficiency. 22 (36.1%) reported being asked previously to engage in a healthcare interaction with an LEP where they felt uncomfortable because it was beyond their language competency. The mean number of semesters of formal Spanish education was 3.75 (SD 3.49), and 28 (45.9%) students reported having some Spanish language immersive experience, with 16 (26.2%) experiencing language immersion for longer than a month. 11 (18%) of responders completed the medical Spanish elective. CCLA and Post Survey: 7/94 (7.4%) students completed the CCLA examination. 4/7 (57.1%) passed the exam with a score >80, indicating language competency in the clinical setting.

Potential Impact: An elective course followed by formal Spanish language testing is a viable format to discuss ethical language skills with medical students. Course work followed by formal testing can assure that students use their language skills appropriately.

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Facilitating Class Culture Committed to Professionalism and Diversity Among Incoming Medical Students

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Problem Statement: Creating an atmosphere of professionalism within a diverse group can be challenging for incoming medical students.

Rationale: Each class of entering medical students represents a microcosm of the medical profession, each challenged to build within themselves a commitment to the core values of the profession. To help the entering class of 2023 at the University of Utah School of Medicine meet this challenge, the Professionalism and Diversity Committee of the Class of 2022 offered a workshop during the Transition to Medical School orientation week. The goal of this workshop was to engage students in activities designed to reveal differences within their class and to help students respect and honor those differences. In effect, the aim was to stimulate the students to work through Tuckman's stages of group development[1] in as thoughtful and timely manner as possible. These stages are forming, storming, norming, and performing. We hypothesized that group activities which helped students expose differences of experience, identify, and opinion could facilitate movement across these stages.

Methods: To implement the forming stage of group development, we divided MS1's into 16 small groups, which were controlled for like-mindedness based on Clifton-Strengths[2] personality types. Each small group consisted of eight MS1s and two MS2 facilitators, each with unique personality strengths. From there, we promoted the storming stage of group development with a small group exercise that was adapted from the Safe Zone Project's "Identity Signs" activity[3]. The MS2 facilitators progressed through a series of thought-provoking questions that were phrased in a progressively personal manner, through which the students could begin to share more personal and private experiences that showed the diversity of their past experiences. Each identity corresponded to a colored bead, which was used to make a personalized bracelet. The activity was finalized with debriefing questions that varied slightly from the traditional Safe Zone Project. Following the Identity Signs activity, all students came together, in a large group setting, to discuss their personal experiences and create a Word Cloud that embodied their ideal class culture. This activity allowed the class to practice the norming and performing stages of group development. To evaluate the workshop we asked participants to complete a 9 question pre- and post-survey that used a 5-point Likert scale. (1 = Very Uncomfortable and 5 = Very Comfortable).

Results: Of the 125 students in the class, 89 responded to the pre-workshop survey and 55 responded to the post-workshop survey. The overall average comfort level of students decreased following the event (4.12 to 4.04). However, there were three questions that showed an average increase in comfort level: having a difficult conversation with classmates, sharing differing opinions, and engaging in conversations about controversial topics (3.44 to 3.71, 3.87 to 3.89, and 3.89 to 3.98, respectively). The overall decrease in comfort level indicates that the class, on average, has embraced the storming stage. Incoming medical students may have a naive inclination to believe they are comfortable talking about differences with other people. It appears that until students are put in a situation to actually practice this theory that they realize it is harder or more uncomfortable than they thought. The specific areas of improvement correlate directly with the workshop activity and show that participation improved students' comfort with discussing difficult topics with their classmates, thus helping them move toward the norming and performing stages. The Word Cloud activity allowed the class of 2023 to apply what they learned about themselves and each other to develop future class norms for resolving differences. The most popular self-selected values for their class culture Word Cloud were: supportive, inclusive, friendship, respect, and accepting.

Potential Impact: By pushing first-year students into Tuckman's stages of storming and norming at the outset of their medical school experience, we believe we facilitated their readiness to embrace the

culture of medicine that celebrates and honors diversity, thus helping the group prepare to perform at their best.

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Preparing Faculty to Proactively Guide First Year Residents

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Idea: Interactive faculty development series to help resident advisors guide learners with customized assessment and learning plans early in residency.

Need: Nearly one in ten residents struggle in training, with medical knowledge being the most common issue followed by clinical reasoning and judgement [1]. While ACGME outlines core competencies required for resident performance, there is little guidance in addressing deficiencies. In addition, most residency faculty have little formal training in objective assessment of learning gaps [2]. Individualized learning plans (ILPs) can help guide each resident's training but have historically been used as part of a remediation effort and not as a proactive intervention. Although the 2019 ACGME updated Common Program Requirements now include development of ILPs for all residents [3], many program directors have not yet adopted ILPs often due to lack of faculty training. GME faculty who serve as advisors can build the skills needed to obtain a baseline assessment and to help guide learners in creating individualized learning plans early in training. A proactive approach can help address learning gaps before remediation is necessary, when learners are more likely to be engaged. In addition, helping learners build their own individualized learning plans can help set the path for lifelong learning and development [4]. This proposed faculty development series will build skills of GME faculty advisors to allow for customized assessment and creation of individualized learning plans early in residency that can be transformed over time as learners grow and build skills during training.

Methods: The two 2-hour faculty development sessions will focus on GME faculty members interested in enhancing their work as an advisor (n=10). The goal of this two-session innovation is to help faculty better diagnose their advisee (session 1) and guide them in developing an ILP (session 2). The first session will focus on getting to know the resident using a set of frames based on educational science. The five frames selected are: 1) mindset (growth vs fixed) 2) self-knowledge (metacognition); personal strengths (VIA character strengths) 3) Dreyfus model 4) learning style and 5) support system. Participants will review two prewritten scripted conversations between advisor and advisee and debrief filling in the frames. They will then practice a structured oral interview technique using a set of scripted conversational questions that help them gain insight into their new resident advisee. The 2nd session will focus on guiding the learner in developing an ILP by 1) reviewing ACGME competencies and fitting areas of improvement into that framework, 2) reviewing Dreyfus model of learning stages and taking a stepwise approach to get to goal, 3) utilizing specific tools found to be effective in addressing learning gaps for their specific learner and 4) recommendations for follow-up with their learner. Faculty will be asked to bring data they have collected from a single learner to build an example ILP for that learner which will be reviewed in pairs and by the instructor.

Evaluation Plan: The evaluation of the intervention will incorporate several methods. 1) We will track attendance and monitor the timing of the sessions. 2) A standard questionnaire will be used to gain participant opinion about the organization, instruction, content, and usefulness of the two workshops. 3) Faculty participants will be asked to complete a pre and post survey to gather data on the techniques they used with advisees prior to the first workshop and one month following the second workshop. 4) To gain information about the usage of the residents' ILPS, participant surveys will go out at 6 months to inquire about the six-month reviews with their advisees,. Since this workshop is planned to be given every year, changes will be made in the next round based on these data.

Potential Impact: The workshop set could be a model for educating GME faculty on proactive structured assessment of new residents and in helping to equip new residents with proper tools for creating (and carrying out) effective individualized learning plans.

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Use of an Innovative Peer Mentorship Approach to Improve Faculty Multilevel Teaching Skills

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Idea: Use of a peer mentorship approach for subspecialty faculty to develop multilevel teaching skills.

Need: One of the biggest challenges for attending physicians is to teach a group of trainees who are at different levels of learning [1]. In one study by Certain et. al, 50% of internal medicine attendings surveyed indicated multilevel teaching (MLT) was difficult to do [1,2]. To lead a team of trainees, faculty must be proficient in MLT. While faculty often have experience teaching medical students and residents, many subspecialty faculty have limited experience teaching fellows. This is especially true in pediatric hospital medicine (PHM), as fellowship is a newer concept that is growing exponentially. While there is a scholarship on MLT techniques for teaching in clinical settings, no current formal faculty development programs to help faculty to better teach and guide learners in the clinical setting could be found. Professional development to help faculty develop the MLT skills required to teach and support fellows, in addition to other levels of learners, in the hospital setting is essential [3]. By utilizing a peer mentorship approach for PHM faculty to build multilevel teaching skills, we will increase the number of faculty who feel comfortable diagnosing learner levels, working with, and training PHM fellows.

Methods: The intervention will focus on 5-10 pediatric hospital medicine (PHM) faculty members interested in building their multilevel teaching (MLT) skills. The intervention will utilize a hybrid approach of group faculty development and peer-to-peer mentorship. We will use MLT experts to lead skill-building sessions and provide the cognitive content. The peer-to-peer mentoring within the groups will deliver the affective domain of learning, and will hold each faculty participant accountable for implementing the learned techniques and behaviors from the expert-led sessions. The intervention will include: 1) Five, hour-long interactive skill-building sessions for one year. The sessions will occur in hospital conference rooms and focus on building multilevel teaching skills, team leadership skills, and feedback techniques . The sessions will be led by “experts” in MLT techniques and include didactic and small group-based learning, incorporating case-based discussions. The goal of each session will be to formulate a personal plan of action to involve these new skills in the next clinical rotation. 2) In between sessions, the group of faculty participants will discuss their utilization of the skills via a mobile group chat (selected by the group), moderated by the lead author (BLP). This will help with the integration of their plans of action into their teaching and the moderator can access answers to any questions or concerns.

Evaluation Plan: The evaluation will incorporate multiple methods: 1) We will track attendance at core sessions and the use of the mobile group chat. 2) We will use standard session evaluation forms to gather participant reaction and key learning points after each expert-led session. We will also use faculty participant surveys every other month to assess the implementation of plan of actions, and attitudes towards the curriculum. 3) Learning will be assessed through expert review of participant plans of action every 4 months as well as a review of the key learning points from each session. 4) Overall change in behavior will be assessed through review of a pre-curriculum and final “what I have done” questionnaire administered and debriefed in the first and final sessions. This tool will encourage all key MLT principles.

Potential Impact: This innovation can inform efforts of other institutions to improve multilevel teaching skills. This curriculum, if effective, could be shared with any health professionals that have learners on multiple levels or from different backgrounds, as in interprofessional teaching settings.

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Assessing Trainees in Global Health Clinical Rotations: Reflective Writing in Practice

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Idea: Reflective writing is a useful tool to measure competencies and transformative learning in global clinical experiences (GCE).

Need: Despite the continued interest in global health (GH) rotations for medical students, efforts to develop methods to assess the efficacy and utility of GH experiences on student learning have been somewhat limited. Students often travel without a faculty member from their home institution, which makes it difficult to observe clinical learning directly. Assessment can also be complex, as GCEs can vary greatly in terms of curriculum content, training experience, supervision, and mentorship. Given the portability of reflective writing and the ability to engage in the process in a variety of ways, it is an excellent means to assess student learning in GCEs. While both authors have used reflective writing to assess learning in global health settings, reflective writing can also be a useful assessment tool in clinical settings in the United States. Perhaps due to the fact that it is time- and labor-intensive, reflective writing to assess learning remains an innovation in medical education, and its use is not widespread. Yet there are ways to create clear, concise codebooks in order to increase the likelihood of interrater reliability and to make this a more viable assessment tool. The authors will discuss their experiences in using reflective writing to assess students from both Yale and UCLA who have participated in GCEs, but would also like to brainstorm with conference participants on additional ways to use reflective writing to assess learning in other resource-different settings.

Methods: Presenters from Yale and UCLA will discuss two separate reflective writing strategies that have already been in use with trainees at their respective institutions. At Yale, open-ended reflection papers were assigned over a three-year period as part of the GCE and analyzed using qualitative methods, and were coded for themes, which included transformative learning. The sample size was relatively small (n=27), and the students were mostly at the same international site, and the reflections were written upon return from the GCE. At UCLA, 130 students over a five-year period responded to four reflective writing prompts that aimed to assess transformative learning and competencies. One of these reflective writing prompts was assigned prior to departure for the GCE, and the other three were completed following each of the three weeks of the GCE, most of them completed while still at the international site. Like at Yale, these reflective writing prompts collected at UCLA were coded qualitatively for themes. Both approaches allowed the authors to have a better understanding of the student experience and to create curricula that can potentially facilitate transformative learning and assess competencies.

Evaluation Plan: Presenters are still exploring best practices in using reflective writing to inform curricula and to assess learning. While data has been analyzed in innovative ways to assess learner competencies and transformative learning, and appears to illustrate associations with deeper learning and improved clinical reasoning during GH rotations, the process of analyzing reflective writing can be complex. Firstly, time and patience is required for reviewers to analyze the data and to agree on themes, in the quest for interrater reliability. A very clear, concise codebook is required, and this takes time to develop. Secondly, the process of analyzing the data is very labor and time-intensive overall, which makes it seem daunting for some. That being said, based on preliminary analyses of reflective writing at UCLA and Yale, with variability in how it was used at the two institutions, the authors are convinced that reflective writing is a valuable tool for assessing learning.

Potential Impact: Using reflective practice to assess learning in GCEs, and in resource-different clinical settings, is worth the extra time it takes to analyze reflective writing for trainee learning. By using a clear and concise codebook, it is possible to develop a consensus on what has been learned.

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Overlaying Pre- and Post-mortem Imaging of Body Donors During Anatomical Dissection Using Augmented Reality

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Problem Statement: The novelty of augmented reality leads to a paucity of evidence regarding the impact of its implementation into surgical anatomy education.

Rationale: Our research aims to evaluate the effect of augmented reality (AR) and diagnostic imaging (pre- and post-mortem images) on student dissection experience using augmented reality in an anatomy elective course for senior medical students entering surgical residency. Spatial ability, dissection quality, satisfaction and feasibility of the use of HoloLens as well as qualitative students' perceptions on the use of AR to integrate anatomy and radiology in medical school training were evaluated.

Methods: We utilized a convergent parallel mixed methods approach to collect both quantitative and qualitative data from 27 fourth-year medical students in the Anatomy for Surgeons four-week course. Students were randomly divided into two groups utilizing diagnostic imaging on AR HoloLens or iPad. Subgroups were then formed with 5 students per donor; 1 to head and neck, 2 to trunk, and 2 to limb streams. Spatial ability was assessed before and after the course using the anatomical mental rotation test (AMRT) and analyzed with parametric statistics. Dissection quality grades for the course and login access to either pre- or post-mortem images were also collected. The student experiences were documented in surveys and focus group interviews, and analyzed with non-parametric statistics and thematic analysis, respectively.

Results: AMRT data showed no statistically significant differences between groups nor pre- or post-AFS course. This may be attributed to the poor discrimination power of AMRT within this specific group. The quality of dissection improved significantly for the trunk stream but not for the other streams. Survey data showed increased motivation for learning and superior interpretation of imaging when using HoloLens. Focus groups showed the positive impact of the HoloLens on dissection planning, individual learning, and surgical professional development. Student satisfaction on the implementation of HoloLens varied based on organ stream, individual student skill, and comfort with the software. Login access as well as student survey data showed that students preferably used pre-mortem compared to post-mortem images.

Potential Impact/Lessons Learned: Potential Impact or Lessons Learned: Our findings show that the HoloLens AR device, when implemented in a dissection course, increased medical student motivation and facilitated dissection planning. Feasibility in AR implementation was limited by software crashing, restricted course time, and availability of imaging per organ stream.

Measures of Effective Clinical Supervision: Testing the COBECS Model for Multidimensionality

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Problem Statement: Roles of clinical supervisor and their supervisory practices hav been debated at various forum in AKU. Residents and faculty perceptions were taken.

Rationale: The objective of this study was to identify factors that facilitate or hinder the process of clinical supervision. Furthermore, to have a better understanding of the relationship between self-efficacy, residents' learning environment and Clinical Supervisor competence through resident and supervisor responses. Furthermore, there is a need to determine the effect of the quality of supervision on residents' ability and self-efficacy, identify factors that affect a supervisor's competence and as a result deduce the competencies that need to be enhanced for effective supervision.

Methods: A descriptive survey design and census sampling technique was used, including all residents registered with Postgraduate Medical Education (PGME) at Aga Khan University (AKU) and all full time clinical supervisors. Different self-administered questionnaires were completed by the residents and Supervisors. Resident evaluations by supervisors and supervisors' evaluations by residents were also obtained. Descriptive analysis was conducted with factor and regression analysis with 80% level of significance (p-value <0.05). Responses were applied to a CS Model to develop a theoretical framework.

Results: Residents and CS response rates were 74.38% and 74.04%, respectively, with Cronbach's α of 0.97 and 0.92. Maximum responses received from R2 (87.5%) followed by R1 (77.6%). Subscale I, Self-Efficacy had a Cronbach's α of 0.85, Subscale II PHEEM had Cronbach's α of 0.95 and Subscale III Supervisor Evaluation had Cronbach's α of 0.93. Regression analysis showed significant relationship (p= 0.000) between self-efficacy and learning environment and between self –efficacy and supervisor evaluation. Majority of the clinical supervisors (37.5%) had an experience of ten or more years of teaching experience. Majority of the supervisors (62.5%) had attended the Introductory Short Course in Health Professions Education (ISC-HPE), a mandatory course for all incoming faculty members at AKU. Responses showed that i) structured clinical supervision was needed; ii) senior resident self-efficacy levels were higher than those of junior residents; iii) formal supervisor-resident relationship was essential for conducive learning environment; iv) CS self-evaluations were higher than residents' evaluations of their supervision, and were unaware of the differing needs at different resident levels. Factor analysis elicited three, two and one factor for Residents Survey subscales. One factor elicited for Supervisor's Questionnaire. Regression analysis showed correlations between resident self-efficacy, learning environment and supervisor evaluations.Theoretical framework model was developed.

Potential Impact: CS is a multidimensional process. Study confirms the interrelationship of resident and clinical supervisor factors. Theoretical Framework for Competency/Outcomes-Based Effective Clinical Supervision was developed. Faculty development programme is proposed based on ACGME, CanMEDs, CPSP competencies.

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Effect of the Jigsaw Method in Enhancing Learning of Biostatistics in a Medical School Curriculum

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Problem Statement: Understanding common statistical tests is important in the practice of evidence-based medicine, yet medical students perform poorly in this area.

Rationale: Evidence-based medicine is a practice that helps physicians make informed treatment decisions for their patients. At Kent State University College of Podiatric Medicine, first-year medical students take a one-credit hour, nine-week course on medical research that delivers content to prepare them for this practice. Inferential biostatistics, specifically when to use common statistical tests, has continually been a difficult concept for students. With the abbreviated nature of the course, only one two-hour class session is devoted to this content. The jigsaw method is a cooperative learning technique that seeks to enhance student learning through positive interdependence (Aronson and Patnoe, 2011; Nusrath et al. (2019)). It has been used to teach statistics at the undergraduate level with reported student satisfaction (Perkins and Saris, 2001). The purpose of this study was to assess whether the jigsaw enhanced medical student understanding and retention of common statistical tests.

Methods: The jigsaw method was implemented in the Fall 2018 semester of the medical research course. Each student was assigned one of six statistical tests for which they watched a single video prior to attending class. In class, students broke into “expert” groups, where discussion enabled them to further their knowledge on their assigned test. They then broke into new “jigsaw” groups with at least one “expert” per statistical test to teach each other and complete an assignment. For two given research scenarios, the groups had to determine and justify the appropriate statistical test to use. To assess whether the jigsaw technique increased immediate understanding of the material, the performance on the Fall 2018 in-class assignments were compared to those from the three years prior to implementing the teaching method. For the Fall 2015-2017 semesters, students were required to watch six pre-recorded videos of the common statistical tests prior to the start of class. During class, they broke into groups to complete an assignment that consisted of four research scenarios, with questions regarding the appropriate use of statistical tests. To examine whether the jigsaw method enhanced retention of the material, the performance on the final exam statistics questions were compared between the Fall 2015-2018 semesters. One-way ANOVA with a Games-Howell post hoc test was used to determine if there were differences in performance from 2015 through 2018. Significance was defined as $p<0.05$.

Results: The average score on the in-class group assignment when the jigsaw technique was employed (Fall 2018) was 96.7 ± 12.9%. This was significantly greater than the in-class group assignment scores from the Fall 2015 (70.9 ± 16.0%; $p<0.0005$), Fall 2016 (68.3 ± 20.6%; $p<0.0005$) and Fall 2017 (77.8 ± 19.0%; $p=0.004$) semesters. Thus, the jigsaw method increased the medical students’ ability to immediately understand common statistical tests and when to apply them. The average score on the Fall 2018 final exam questions that asked students to select the appropriate statistical test for a given scenario was 83.4 ± 21.5%, while that for Fall 2017 was 79.4 ± 29.6%. This difference was not significant ($p=0.245$). However, when considering the final exam question that was identical for both the Fall 2017 and the Fall 2018 final exams, there was a significant difference. The average score for that question was 69.3 ± 46.3% in Fall 2017 and 94.5 ± 22.8% in Fall 2018 ($p<0.0005$). The data suggests that the jigsaw method is an effective way to help medical students retain understanding of the commonly used statistical tests.

Potential Impact: A characteristic of medical education is that vast amounts of material must be learned and retained in a brief amount of time. This study indicates that the jigsaw method may be a successful tool for teaching difficult content such as biostatistics in limited time, but with maximum impact.

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Development of a Faculty-Led Outpatient Morning Report Model to Enhance Resident Learning

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Problem Statement: An innovative outpatient morning report model designed to improve FM residents' knowledge of evidence-based guidelines and systems-based practices.

Rationale: Despite family medicine residency training being predominantly outpatient focused, most of the literature addressing resident teaching has revolved around inpatient learning platforms, such as morning report. Sparse data is available regarding ideal formats for clinic-based education and the use of morning report as an instrument for outpatient teaching. Additionally, the limited literature addressing the impact of morning report in the outpatient setting has shown mixed responses from learners (1,2). This study aims to determine the ideal format for outpatient morning report, and the impact of an outpatient morning report model in a residency clinic, specifically as it pertains to residents' satisfaction with the quality of teaching provided by faculty, as well as their self-perceived confidence with knowledge and application of evidence-based guidelines and systems-based practices.

Methods: 38 residents and fellows at a family medicine program were surveyed regarding their satisfaction with outpatient faculty teaching, self-perceived confidence of their medical knowledge, as well as their preferred format for outpatient teaching. Subsequently, a 16-week outpatient morning report curriculum was implemented, that involved weekly, faculty-led 30 minute sessions focused on evidence-based guidelines and system-based practices with the incorporation of board-review questions, addressing core topics identified by residents as frequently seen in clinic. Thereafter, post-test surveys were completed by residents with particular attention to the changes in their perceptions of faculty teaching and self-perceived knowledge of how to manage commonly encountered outpatient conditions.

Results: 33 residents (86% response rate) completed the pre-test survey, and 30 residents (79% response rate) completed the post-test survey. 75% of residents desired the focus of the outpatient morning report to be on evidence-based guidelines, with 44% of these residents favoring the incorporation of test questions into the sessions. A 16-week outpatient morning report curriculum was developed, using high-yield topics identified by residents in the survey. The teaching sessions were faculty-led, and utilized guidelines from various resources including the AAFP, with special focus on the "Expected-Practices"—algorithms derived from evidence-based guidelines, adjusted to take account of resources available to our patients in the Los Angeles County health system. 80% of the residents that completed the post-test survey found the new model "extremely helpful." After the completion of the curriculum, residents reported an increase in confidence with their knowledge of evidence-based guidelines and systems-based practices (57% somewhat comfortable or very comfortable after vs. 27% prior), as well as an improvement in their satisfaction with the quality of outpatient faculty teaching in clinic (76% after vs. 33% prior).

Potential Impact: Implementation of this outpatient morning report curriculum has highlighted the successes and areas for improvement of an innovative model that can be easily adapted or incorporated by other institutions at their clinical sites.

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Implementing a Flipped Classroom Approach for Pediatric Resident Education in the NICU

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Problem Statement: Evaluation of a flipped classroom curriculum designed to optimize knowledge, competency, and satisfaction of pediatric interns in the Neonatal ICU.

Rationale: Neonatology can be a challenging experience for resident physicians as it requires specialized knowledge and skills different from general pediatric medicine. Our institutional needs assessment data revealed that a majority of resident physicians had received sporadic, reduced teaching on fundamental topics of neonatology, warranting an intervention to improve the state of teaching. We proposed that resident physicians would become more knowledgeable and competent with management of the critically ill neonate. In order to accomplish these objectives, we implemented a flipped classroom (FC) approach to promote active learning through resident engagement in case-based discussions [1]. We hypothesized that FC would improve knowledge acquisition via application of self-directed learning embodied in this approach [2]. We compared our FC approach based on six selected topics with content taught via the traditional curriculum (non-FC topics).

Methods: To date, fourteen pediatric interns rotating through the level 3 NICU at UCLA participated in the study. We used a pretest-posttest study design, descriptive statistics and matched-pairs T-Test for data analysis. The study sequence was as follows: 1) pre-surveys eliciting self-reported competency and knowledge based on FC and non-FC topics were administered to each intern prior to the rotation. Likert scales from 1-5 were employed, with 5 being the most competent; 2) During their two-week rotation, interns independently reviewed six brief (6 to 15 minutes) online multimedia presentations addressing core NICU topics. These modules were designed using Mayer's cognitive theory of multimedia learning [3]. 3) All six topics were discussed in the form of case-based learning during designated times at the NICU, with 60 minutes devoted to each session. 4) The same interns were assessed on other equally critical NICU topics not included in the FC curriculum to compare the impact of FC knowledge acquisition and competency with a traditional curriculum and teaching. Explicit instruction of these additional subjects was at the discretion of the attending neonatologist. 5) At the conclusion of the rotation, interns completed the same surveys of self-reported competency and knowledge in FC and non-FC topics to evaluate overall change. They also completed a general evaluation to assess satisfaction with the FC curriculum. Scores are reported as means ± standard deviation.

Results: Per Likert scale analysis, a majority of residents, 12/14, 'strongly agreed,' and 2/14 residents 'agreed' that the e-learning videos and the interactive case-based discussions were valuable, and increased comprehension of the FC topics. All residents expressed agreement that the FC approach improved independent decision making; however, they did not report a preference for the FC curriculum to didactics, with 7/14 rating 'neutral' to either form of teaching, and 4/14 preferring didactics. Average pre-FC competency scores were lower (8.50±2.17) than pre-non-FC scores (10.71±2.97) ($p=0.001$). Change in self-reported competency (post-curriculum minus pre-curriculum scores) was significant between FC (10.8±2.93) and non-FC subjects (5.4± 4.21) ($p<0.001$) as the intervention increased scores despite pre-FC scores being lower than non-FC scores ($p=0.001$). Knowledge examination scores increased from start (58.91±16.56) to end of the rotation (86.27±6.82) ($p<0.01$). The number of FC questions missed at the end of the rotation was significantly lower than non-FC questions missed at end of the rotation (FC questions missed: 0.85±1.02; non-FC questions missed: 2.42±1.08) ($p<0.001$).

Potential Impact: Our study demonstrates the potential of a FC to promote knowledge and competency among resident physicians. Satisfaction, knowledge and competency outcomes with FC were positive among this group of learners. FC could be utilized in other training programs to enhance graduate medical education.

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An Asynchronous Flexible Elective for Emergency Medicine-Bound Senior Medical Students

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Problem Statement: Senior medical students struggle to balance the time burden of the residency interview season with simultaneous focus on educational courses.

Rationale: Concerns about the utility of the fourth year of medical school curriculum are longstanding. Current and former fourth year medical students report that the final year of medical school serves primarily to prepare students for the match process and future residency training [1]. As such, students often report frustration with the lack of flexibility in scheduling rotations during the residency interview season and request greater time allotment for the interview process itself. Medical schools have struggled to find ways to restructure curricula during this time period to allow for flexible attendance and scheduling while still ensuring educational value to their students [2]. For these reasons, asynchronous delivery of specialty-specific course content may be beneficial during the residency interview season [3]. We piloted a four-week emergency medicine (EM) “flexible elective” that provided specialty-specific core content to fourth year medical students during the interview season.

Methods: Course Structure: Eighteen fourth year medical students participated in this pilot course. Weekly activities were organized around common chief complaints seen in the emergency department (ED). Each week, students engaged in four days of multimodal self-study and independent case preparation, with one day of on-campus progressive disclosure cases, simulation-based learning, and procedural training in a fresh tissue cadaver lab. For the self-study portion, students followed a detailed day-to-day schedule that included EM-specific resources in multiple formats (e.g. podcasts, textbooks, videos, question banks) to accommodate individual learning styles. During on-campus sessions, diverse teaching and learning techniques were used, including small group discussions, learner presentations, formal didactics, simulation, and expanded cases. Course Evaluation: We used a mixed methods approach in conducting our course evaluation. Weekly online surveys were distributed to students to assess perceptions of the self-study resources and determine any barriers to completion of the assignments. Additionally, a standard end-of-course survey utilized Likert scales and free responses to gauge learner reaction to the learning objectives, structure, learning environment and educational value of the course. Six months after the conclusion of the course, we conducted two semi-structured focus groups with course participants to gain a richer understanding of students’ experiences with the course.

Results: On the standard end-of-course evaluation from the Keck School of Medicine of USC, all students gave the course a 5-out-of-5 rating (n=18). Descriptive analysis of additional weekly survey data is ongoing. Preliminary, qualitative thematic analysis of focus group data suggests that the flexible structure of the elective decreased the stress of the residency interview process while still offering an enjoyable and valuable learning experience. Students reported that the elective was, “a win-win where [they were] still learning but [were] able to go to interviews” and that, “the baseline stress level is pretty high during interview season, but being able to learn that much without pulling out your hair for this class was really, really nice.” Additionally, students felt that the course provided, “a good introduction [on] how to think more like a resident” and exposed them to “different learning tools besides reading a textbook that [they could] do during residency.” They suggested that the small group format of on-campus meetings allowed for “increased participation” and more “involved discussions,” and that the active teaching techniques increased their retention of knowledge. One student commented that the course was, “a comprehensive resource that I had been looking for for a while to help me be prepared for intern year.”

Potential Impact: These preliminary results suggest that asynchronous electives offered during the residency interview season may provide perceived educational value to senior medical students while decreasing stress associated with the interview scheduling process.

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Targeted Case Presentations: Interest Groups Improving Medical Student Confidence in Consultation

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Problem Statement: Medical students are not confident when requesting subspecialty consults for patients they manage on primary care clerkships.

Rationale: Subspecialty consultation is increasingly utilized in the emergency room and general inpatient setting to provide comprehensive patient care. However, formal education in this type of collaboration is limited in preclinical medical school curriculum and medical students lack confidence in requesting consultations [1]. Few approaches have been described in preparing medical students to request consultations during clerkships, but include didactics on interphysician communication and consult-liaison experiences during core rotations [2]. It has been shown that student-led subspecialty interest group presentations increase knowledge among medical students [3]. With interventional radiology as an example, we propose subspecialty interest group case presentations specific to medical students interested in primary care specialties as a model to increase their familiarity with subspecialty medicine, improve medical student collaboration and raise confidence when requesting subspecialty consults.

Methods: Specific cases requiring interventional radiology (IR) consultation were prepared for the internal medicine, family medicine and emergency medicine interest groups. A pre-post presentation survey was administered to 81 medical students (n=81). The educational content included an overview of the field of IR, basic principles and techniques of interventional radiology, the role of an IR in a multidisciplinary team, IR case presentations specific to the primary care specialty and indications for and benefits of IR consultation. Case presentations included percutaneous drainage of intraabdominal abscess and transjugular intrahepatic portosystemic shunting for internal medicine, uterine fibroid embolization and kyphoplasty for family medicine and embolization of acute arterial bleed for emergency medicine interest groups. Surveys were administered to students prior to, and after the presentation to assess change in knowledge following the presentation using a likert scale. Other exploratory variables collected via survey were students specialty of interest, gender, and year of study. McNemar's test was used to examine differences in pre- and post survey responses. Statistical analyses were conducted using STATA Corp v.14.2.

Results: A pre-post presentation survey was administered to 81 medical students (n=81). Third and fourth year medical students as well as those who did not complete both pre-post surveys were excluded from the final analysis, with 70 pre-post surveys completed by first and second year medical students remaining for analysis (n=70). The primary outcomes measured were (1) familiarity with IR and (2) basic principles and techniques, (3) the role of the IR physician in a multidisciplinary team and (4) in their field of interest, and understanding (5) some IR procedures in their field of interest along with (6) indications for and (7) benefits of consultations/referral to IR. There was a statistically significant increase in knowledge and familiarity in these areas from baseline ($p<0.0016$) (Table 1). Additionally, nearly 33% of first and second year medical students indicated they were interested in 2 or more specialties or undecided.

Potential Impact: Medical students lack confidence when requesting consults for patients they manage on primary care clerkships. Subspecialty case presentations to students interested in primary care specialties increases their familiarity with subspecialty medicine and improves confidence when requesting consults.

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Staying Focused on the Goal:
Developing Team-based Learning Sessions with Backwards Instructional Design

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Workshop Description: As more medical schools integrate flipped classroom approaches to teaching, medical educators are presented with an opportunity to shorten their lectures and make more time for interactive, collaborative learning experiences. In this workshop, participants will learn how to use backwards design and Team-based Learning (TBL) techniques to create engaging, challenging learning experiences with their students. Participants should bring an idea for a flipped lesson or module.

Rationale: Backwards design processes, like the one presented in this workshop, lead to instructional materials that focus students' attention on content that is high-leverage and relevant. While backwards design methods have been popular in instructional design since the mid-2000s, many medical school faculty members still design their teaching materials with a content-centric approach. The prevalence of content-centric design leads to learning experiences that are overstuffed with information that is not always relevant to students. This session will focus on combining backwards design with the Team-based Learning framework to create a focused teaching session that helps students use and contextualize information from their lectures, readings, and other resources.

Learner Outcome Objectives: Learners will be able to:
1) Articulate the phases and key features of the backwards design process.
2) Describe the key features and phases of the Team-based Learning methodology
3) Use backwards design processes to develop an active learning session using the Team-based Learning methodology

Intended Participants: This workshop is ideal for:
- Clinical educators with little or no instructional design experience
- Medical faculty with moderate levels of experience who need a strong framework for flipping classes

Methods: We have designed this workshop to give participants as much time as possible to sketch out their ideas, develop them in pairs and small groups, and share them out to the class.

Activity Timeline:
10 minutes – Ice-breaker and orientation to the session
20 minutes – Backwards Design and Team-based Learning Overview
10 minutes – Goal and objective writing activity with pair-share
20 minutes – Developing an Application Exercise
10 minutes – Writing RATs and Selecting Pre-Session Resources
20 minutes – Share-out of lesson plans

Values-Based Practice in Medical Education: Practical Considerations

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Workshop Description: Evidence-based practice (EBP) and values-based practice (VBP) are complementary partner components of clinical decision making. Both EBP and VBP offer clinicians a way to achieve the objectives of improved quality, improved patient satisfaction, and reduced costs. In this workshop, we will enhance the awareness of VBP and give an overview of how to integrate VBP in medical education.

Rationale: Evidence-based practice (EBP) and values-based practice (VBP) are complementary partner components of clinical decision making. Both EBP and VBP offer clinicians a way to achieve the objectives of improved quality, improved patient satisfaction, and reduced costs. While clinicians are comfortable making decision based on evidence-based science, values-based practice adds more layers of complexity that take into consideration patient and other stakeholders' priorities. In this workshop, we will enhance the awareness of VBP and give an overview of how to integrate VBP in medical education.

Learner Outcome Objectives: The attendees will end up with a framework to enhance the integration of VBP in medical education. By the end of the workshop, they should be able to:
1) Distinguish between VBP and EBP.
2) Develop the skills to identify values that are valid to health care practice.
3) Highlight values present in a clinical situation and recognize additional information needed to proceed to decision-making.
4) Understand how VBP skills of awareness, reasoning, knowledge, and communication aid in balanced decision-making.
5) Develop a framework to teach and assess VBP in medical education.

Intended Participants: Faculty, health care practitioners, residents and medical students

Methods: The workshop will start with an overview presentation (10 mins) and then will be divided into 4 sections [15 minutes each] in which the attendees will be divided into small groups for discussions and brainstorming. We will end the workshop with a wrap-up presentation.

Activity Timeline:
10-minute – Overview of values-based practice PowerPoint presentation
10-minute – Section 1: What are values? group exercise
10-minute – Group discussion
15-minute – Section 2: The skills of Values-Based Practice group exercise
10-minute – Group discussion
10-minute – Section 3: The "two-feet principle" group exercise
10-minute – Group discussion
10-minute – Section 4: Teaching Values-Based Practice group exercise
10-minute – Group discussion
15-minute – Conclusion and wrap up PowerPoint presentation

Take Home Tools: Developing a framework to teach and assess VBP in medical education.

The Practitioner's Guide to Global Health: An Interactive, Online, Open-Access Curriculum Preparing Medical Learners for Global Health Learning Experiences

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Description: The Practitioner's Guide to Global Health (PGGH) on edX.org is the first open-access massive open online course (MOOC) preparing learners for safe and ethical global health learning experiences. The curriculum includes pre-departure and post-return components, including case scenarios, video vignettes, a discussion board, and quantitative evaluation. PGGH permits flexible and asynchronous learning, is free of charge, and provides a certificate upon completion.

Need: Short-term experiences in global health (STEGH) are becoming more common at all levels of US medical education. Despite the many documented advantages to participating in a STEGH, ethical concerns remain regarding individuals' motives and unintended impacts on host institutions and populations. Participation in STEGH also involves health and safety risks to trainees. Learners may be challenged to navigate high-risk situations involving ethics, personal safety, and cultural sensitivity. Additionally, when learners return home, they may experience reverse culture shock and associated psychological stress. Robust guidance and adequate preparation for safe and effective STEGH are necessary to mitigate these risks, optimize the learning experience, and increase the chance of making useful contributions to the host population. Global health preparation curricula vary greatly, and the purpose of this innovation is to create a free, timeline-based, interactive MOOC that will be available to all.

Methods: Global health experts from 8 countries, 42 institutions, and 7 specialties collaborated to create The Practitioner's Guide to Global Health. The curriculum is built on an extension of previously published timeline-based phases of a STEGH: contemplation, preparation and participation, and reflection; as such, it is organized by topics and issues that may occur at different periods of time: Part 1: 'The Big Picture', to be completed 6–12 months before a STEGH, is relevant when trainees are contemplating why/when/where. The trainee is asked: Why do you want to have a STEGH? What kind of experience is appropriate for your current level of training? When and where should you go? How will you fund it? Part 2: 'Preparation and On The Ground', to be completed 1–3 months before a STEGH, provides a nuts and bolts 'how' toolkit for predeparture preparation and on-the-ground experiences. Part 2 addresses the logistics of planning, health, cultural awareness and sensitivity, and dealing with unexpected situations while abroad. Part 3: 'Reflection', to be completed toward the end of the learner's rotation or within 2 weeks of return from their STEGH, helps the learner reflect on the challenges of returning home, dealing with unexpected physical and mental health issues, and planning for the future. Each part ends with a posttest and evaluation. Upon passing the posttest, participants may receive a verified certificate from edX or a Credly digital credentialing badge.

Results: As of 3/15/19, over 11,000 learners have completed the PGGH course. A total of 163 countries are represented. International learners (non-US) comprise 65% of the learner population. The median age is 30 years, and 55% are female. Participants had statistically significant improvement in post-course scores when compared to pre-course scores ($p<.05$). Qualitative and quantitative post-course feedback was collected on REDCap surveys as well. Learners expressed interest in faculty-moderated discussion forums, in an interactive map to promote learner networking, and in additional material for trainees coming from low-resource set- tings. The course was rated at 4.5 stars, which is comparable to learner ratings of other edX courses At this time 14 academic institutions require the course of their learners before they may participate in a global health learning experience.

Potential Impact/Lessons Learned: Intended Learners: Learners prior to licensure in a Health Profession (e.g., medical students), Advanced Trainees in a Health Profession (e.g., residency, fellowship level), Practitioners (e.g., continuing education or on-the-job activities),Faculty or instructors, Interprofessional Education Project: Learners at any level

Moving Beyond Wellness Curriculum — Building a Culture of Community Wellness

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Description: While the importance of addressing wellness for medical learners has been noted, many efforts toward addressing wellness have taken the form of development of didactic curricula, rather than on building a community and culture that promote wellness. We focus on building community and relationship-based skills to establish an authentic culture of well-being and prepare learners with lifelong skills and tools for well-being rather than addressing short term remedies.

Need: Creating a wellness curriculum that is authentic, addresses the myriad issues that can arise related to learner wellness, and is responsive to the individual needs of each learner has proved challenging. To meet this challenge, we have adopted a practice of building a community and culture supportive of wellness, connectedness, responsibility toward one another, and self-care, combined with skill development that emphasizes both individual and community needs and enables learners to adapt wellness practices to their personal needs and interests while remaining supportive of the community. A part of every campus activity or curricular element is assessment of the potential "wellness impact" on groups and individual faculty, staff and students. Recognizing that forces from the larger medical community impact well-being of practicing physicians, a goal has been to prepare learners for their future roles as physician leaders and change agents, as well as their current situations.

Methods: At the UGME program we begin our accelerated curriculum ensuring that each learner is immediately connected to peers and faculty upon arrival with a one-month long doctoring course that includes significant time for reflection, advising, community engagement, and peer and faculty interactions. The GME component includes additional skills related to preparing to enter practice. Both include spouses and families as appropriate, as well as topics such as "wellness on a budget" and recognition of personal and professional influences on wellness. We utilize a combination of formal and informal mentoring (traditional advising as well as regular informal events at faculty homes), structured team-building, single and serial events ("What's Cooking" lunch discussion sessions and "Brownbag series" lunch talks), small group activities, flex time, retreats, and community engagement activities ("Community welcome" picnic publicly welcoming each new class) in addition to formal and informal curricular elements related to wellness. Curricular elements include didactics, extensive reflection activities across both pre-clinical and clinical courses, Healer's Art, Gold Humanism, and Woodson Art Museum humanism curricula for humanism. By building wellness habits and skills, rather than simply teaching coping skills and hosting wellness events, our learners are encouraged to chart their own pathway and develop lifelong capacity for improved wellness and burnout reduction.

Results: We have utilized large group, small group and individual feedback obtained over a 4-year period, with iterative responses in as close to "real time" as possible. Teams of students, faculty and staff are involved in each adjustment so that considerations of cost, timing, and effectiveness can be addressed within the limitations that we face. The opportunity to engage residents and students in all aspects of planning and implementation has been utilized throughout the design process. Feedback from learners at both the UGME and GME levels will be presented that suggest our focus on building wellness habits and skills rather than events has better equipped medical students and residents to handle the rigors of their training as opposed to short-term patch provided through participation in a programmed event. Promoting a wellness culture beyond our immediate sphere of influence remains of challenge and includes spouses, families, support staff, budgetary and geographical considerations, and the individualization of authentic well-being. Our key tangible take-away: Development of a culture and community of wellness, while time consuming, enhances the potential for the development of authentic wellness habits rather than programmed wellness coping mechanisms in our medical students and residents.

Potential Impact/Lessons Learned: Intended Learners: Learners prior to licensure in a Health Profession (e.g., medical students), Advanced Trainees in a Health Profession (e.g., residency, fellowship level), Faculty or instructors

The R Word: using group reflection to promote well-being, community, and purpose in medical students

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Description: Students shy away from group reflection because it involves vulnerability. Effectively facilitated group reflection, however, can overcome the risk of vulnerability and promote well-being by fostering community, professional development, self-identity, resilience, and purpose. Our curriculum consists of a series of activities based on Jesuit pedagogy (e.g., highs and lows, examens, anonymous flashcards, interactive walking, etc.). All activities are paired with thematic discussion prompts.

Need: Multi-institutional studies estimate that up to half of US medical students experience burnout during their training. Medical education has become more isolating with the rise of new technologies that promote individualized learning, a trend that may be contributing to the rise of burnout. To combat burnout, shared group identity has been shown to promote a stronger sense of well-being, greater capacity to cope with stressors, and elevated rates of giving and receiving support from colleagues. Weekly, guided group reflection with established activities rooted in Jesuit pedagogy can promote well-being by creating a shared group identity with the goal of creating women and men with and for others. Jesuit pedagogy accomplishes this through four key elements: experience, reflection, action, and evaluation.

Methods: 12 students (9 first-years, 3 second-years) met 2-3 times a month for an hour of guided, group reflection at the University of Utah School of Medicine. Students met over a span of nine months. Participation was capped at 12 students to ensure the cultivation of a safe environment for vulnerable sharing and genuine insight. Every session began with a ritual to ground students to the present. This ritual included playing a different thought-provoking song while students journaled their highs and lows of the week, which they subsequently shared with the entire group. JZ carefully designed 16 unique group activities based on Jesuit reflection that were adapted to fit the medical school experience. Depending on the focus, reflective activities varied from journaling to meditating to physically moving/taking a stance. Each reflective activity concluded with a group discussion guided by paired activity prompts to discuss specific themes and foster more thought challenges. A set of ground rules were honored at each session to promote a vulnerable, yet psychologically safe environment that allowed sharing of genuine hardships, promotion of personal growth, and support amongst peers. At the end of the year, the school's Director of Educational Research confidentially solicited feedback from participants (n=11).

Results: Qualitative analysis of feedback showed 5 reoccurring themes: community, professional development, self-identity, resilience, and purpose. This is illustrated by the following quotes.

- **Community:** "One of my biggest issues…was having to deal with imposter syndrome, and the reflections group helped give me insight into the experiences of my peers…Having a venue to be open and honest with a group of my peers…helped me break through that barrier."
- **Professional development:** "This group creates the opportunity to practice listening, and to observe how other students listen…[This] skill…is directly applicable to talking with patients and colleagues. Being a good listener is something that I would like to be known for as a physician, and this group…showed me how I can practice it as a skill."
- "Academic institutions are trying to incorporate teachings on compassionate communication into curriculum…[This] group created a means to practice and grow these skills."
- **Self-identity:** "I struggled a lot in the first semester of medical school: figuring out who I was going to be...This Reflections group let me be vulnerable in front of my peers and feel safe and comfortable doing so."
- **Resilience:** "…participation in reflection group has helped me remain grounded…This sense of community and friendship helped me to feel that I was not alone…Reflection group helped fortify and strengthen my resilience. I don't think I would have been near as successful in my first year without this group."

- **Purpose:** “[Reflection] has continued to push me to think bigger and deeper, and to practice fierce empathy with my classmates. It's often easier to reflect when things are hard. But some of the most beneficial reflections have occurred when things were going well. Owning success and failure is something I have taken from reflections group into my everyday life…The lessons are directly relevant to being a good physician!”

Healthcare Center Based Model to Address Food Insecurity

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Problem Statement: To develop a healthcare centered model of assessing and addressing food insecurity and to identify risk factors in our patient population.

Rationale: In addition to hunger and malnutrition, food insecurity has far reaching implications on population health. Food insecurity has been linked with poorer academic performance, increased behavioral problems, depression, suicidal ideation, and increased levels of stress. Chronic disease can be exacerbated in households with insufficient food when patients must choose between buying food and paying for medications. Research also shows that people living in or near the poverty level have fewer resources to spend on healthy, nutritious foods and are more likely to consume processed foods high in fat and sugar, leading to increased levels of obesity and chronic disease. By identifying and addressing food insecurity, we can work towards addressing this integral social determinant of health to improve the health of our patients, not only on an individual level but also from a population health perspective.

Methods: 1255 patients were screened at the Memorial Family Medicine (MFM) Clinic using a validated 2-item questionnaire asking whether patients had ever run out of, or worried about running out of food in the last year. An answer of “always true” or “sometimes true” to either question indicated a positive screen. Supplementary questions inquired about food stamp assistance and transportation concerns. Positively screened patients were connected with short and long-term resources for food. Short-term resources included bags of food from an on-site food pantry. The on-site food pantry was developed in partnership with Food Finders to supply nonperishable goods. Patients were also provided with pamphlets on healthy eating on a budget, recipe cards, and a list of local food sources (hot meals, fresh produce markets). Long-term food resources included an optional follow up with an on-site social worker to connect patients with assistance programs. Future plans include additional social workers to provide wrap-around care after the initial screening.

Results: As of August 2019, 25.0% (314 of 1255) of patients screened at the MFM clinic were positive for food insecurity, 13.3% were on food stamps, and 6.5% reported transportation was a problem. Based on the pilot study, 123 families have benefited from the food pantry and 82% of them felt the pantry was helpful. The level of food insecurity among patients at the Memorial Family Medicine Clinic is 25.0%, lower than the 29.2% in LA County, and higher than the 15.0% in California and 12.3% in the nation. Further screening in other clinics is required to determine if these figures may be extrapolated to accurately reflect the level of food insecurity in Long Beach, CA.

Potential Impact: Healthcare center based models provide an opportunity to expand screening for food insecurity. Centers may provide short and long-term resources to positively screened patients, and as the rate of food insecurity decreases, the overall health-associated costs of food insecurity should also decrease.

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Perceived Effectiveness of Professional Development for PhD Students

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Problem Statement: Medical school graduate programs have prepared students for academic careers; these are now scarce. Are they preparing graduates for the new reality?

Rationale: Medical schools traditionally prepared PhD students for academic careers, but these are scarce. Now PhDs often enter non-academic careers.1-2 Programs should adapt training to ensure students' skills for the job market and aid professional development [3]. Canada graduated over 7000 PhDs in 2014, an increase of 1700 since 2010. A new UAlberta professional development program for graduate students was implemented during the time period of the study's pre-candidacy students. This study will focus on gauging doctoral students' perceptions before and after reaching candidacy (i.e., exam in third year of doctoral education) to evaluate the professional development program experienced by the pre- students. Hypotheses: More pre-candidacy students will feel prepared for non-academic careers than post- students, more pre-students will report satisfaction in career guidance from stakeholders than post-students, and more pre-students will experience professional development activities than post-students.

Methods: We recruited PhD students from all Faculty of Medicine & Dentistry (FoMD) departments. There were two rounds of recruitment. The first was offering in-person sessions with lunch while completing an online survey. The second – the data reported here – was from emails sent to all FoMD graduate students. A survey was developed based on experience from two of the study investigators (HO and SP) and issues raised in the literature [1,3]. The study received ethics approval (PRO-00074235) at the University of Alberta. The survey was pilot-tested with master's students in Pediatrics. The informed consent and online survey were sent twice to a publically available email list of FoMD graduate students. All data analyses were conducted using SPSS V26. Chi-square tests were used to test if there was a relationship between pre- and post-candidacy students and the variables in the three hypotheses. Frequency counts were calculated for demographic variables and items within each hypothesis. Composite scores were calculated for preparation for different careers. "Academic Career Preparation" was calculated as the sum of "faculty research" plus "faculty teaching" plus "academic non-faculty" plus "post-doc." "Non-academic Career Preparation" was calculated as the sum of "industry" plus "government" plus "healthcare" plus "NGO." Mean scores for pre- vs. post-candidacy students on "Academic Career Preparation" and "Non-academic Career Preparation" were calculated using independent t-tests.

Results: The sample was 66% female and 64% post-candidacy students. Areas of research were: 76% basic science, 16% clinical, and 5% other. For non-academic job preparation, more pre- students reported feeling prepared than post-candidacy students for: (1) health care positions (73.3% vs. 18.2%, respectively); (2) industry positions (53.3%, 18.5%); and (3) government positions (53.3%, 19.2%). Only perceived preparation for a post-doctoral fellowship was higher for post-candidacy students (33.3% vs. 74.1%). The mean scores for pre- vs. post-candidacy for "Academic Career Preparation" were $M=8.8$ and $M=9.8$, $t=-1.10$, $p> .05$ and for "Non-academic Career Preparation" $M=9.7$ and $M=7.7$, $t=2.29$, $p<.05$. Both pre- and post-candidacy students believed (100%) that they were responsible for finding a job. There was no difference between the groups, both agreed "quite a bit/a great deal" that their supervisor (67%); department (51%); FoMD (43%); and university (50%) held responsibility for them finding a job. Number of conferences (73% vs. 96%) was one area in professional development different between pre- and post- students. More post-candidacy students reported presenting a poster (53% vs. 93%) or giving an oral presentation at a conference (53% vs, 85%) than pre- students. Most students, across groups, reported experience in presenting their work at group meetings (95%), research days (83%), conferences (74%), and department seminars (83%).

Potential Impact: More PhD students graduate each year. What jobs will they hold? The new professional development program experienced by pre-candidacy students may be reaching one of its

goals. More pre-candidacy students feel prepared for non-academic positions than post-candidacy students.

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From Systematic Review to Evidence-Based Organizational Learning: Cyber-Seminars

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Problem Statement: Evidence reviews should inform organizational guidelines. Learning in organizations requires innovative methods to engage practitioners.

Rationale: The Clinical Operations Evidence Review Cyber-Seminar process focused on promoting stakeholder-informed evidence-based decision-making. We evaluated the use of an interactive cyber-seminar linking evidence review experts with organizational guideline developers and stakeholders as a method supporting continuous learning.

Methods: The study team approached leaders within a national guideline program of a large integrated health system with recently published high-quality systematic reviews. After choosing a review, stakeholders identified three decisional dilemmas for a cyber-seminar. The cyber seminar was an interactive, web-based presentation and discussion of the evidence, integrating systematic review findings and organization-specific clinical guidelines within a healthcare delivery organization. We assessed acceptability and impact of the cyber-seminar through structured red qualitative interviews with guideline development leaders.

Results: National guideline leaders identified a diabetes prevention review, and within it a question on lifestyle interventions, as a focus. 29 of 45 invited participants attended, representing national, regional and local inter-professional leadership. Participant discussion focused on issues related to implementation and how evidence could (or could not) inform these. Three of the four invited leaders participated in the post-seminar qualitative interviews. Interviewees identified challenges but indicated that interaction between evidence review experts and stakeholders early in organizational guideline development would impact the final diabetes prevention guidelines. Participants valued the interactive and collaborative approach and stakeholder involvement appeared to be key in facilitating uptake of systematic review findings into routine clinical practice.

Potential Impact: Integrating multi-level, multi-disciplinary stakeholder perspectives in an interactive cyber-seminar, highlighting both evidence review and stakeholder expertise, showed promise as a continuous medical education method, tailoring knowledge to system realities and promoting research evidence.

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Attention-Deficit/Hyperactivity Disorder, Are Residents Following AAP Guidelines?

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Problem Statement: Evaluation of documentation of pediatric residents compared to established guidelines in evaluation, diagnosis, and management of patients with ADHD.

Rationale: Attention-Deficit/Hyperactivity Disorder (ADHD) is the most common pediatric neurobehavioral disorder. Although the American Academy of Pediatrics (AAP) have published guidelines about the diagnosis, evaluation, and treatment of ADHD, it is not clear if resident education prepares trainees to apply the guidelines to their practice. This study allowed for significant and meaningful evaluation of gaps in residents' documentation in an effort to work toward more efficient education of residents and quality of patient care, through practice guidelines, in the area of ADHD.

Methods: Retrospective chart review of 50 charts of children ages 4–18 years seen April to June 2015. Charts were selected if (1) the child was age 4-18 years, (2) the ICD 9 diagnosis code was related to ADHD (314.00 or 314.01), and (3) if the pediatric resident completed the chart. A single reviewer audited and analyzed the charts using a checklist based on the AAP practice guidelines for clinical diagnosis, evaluation, and treatment of ADHD.

Results: Findings indicate that a majority of patient encounters were follow up visits (96%), of which 19% had medication adjustment(s). Symptoms of inattention (19%) and hyperactivity/impulsivity (21%) were addressed at the follow up visits. Academic performance (56%) was the most commonly addressed behavioral component. Co-morbidities were documented 20% of the time. At least one component of the medications side effect profile was mentioned (92%). Many physical examination measurements such as height (66%), weight (100%), blood pressure (96%) were addressed.

Potential Impact: A majority of the patient encounters were follow up visits.Documentation of side effects discussion from stimulant medication was a strength of residents while core symptoms documentation of ADHD was a weakness.An educational intervention will be developed to improve resident documentation.

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Preference for Peers Over Faculty: Building Better Exam Review Sessions

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Problem Statement: We sought to design an effective method to improve understanding and reduce anxiety of exam material in first-year undergraduate medical education.

Rationale: Review sessions prior to examinations are an effective method to reduce anxiety and improve understanding of exam material in first-year undergraduate medical education (MS1). At the University of California, Irvine, School of Medicine, these sessions involve faculty reviewing practice problems and re-emphasizing important content from previous lectures in a lecture hall format. In 2018, we developed and implemented a new small-group-based, peer-led exam review session in the Medical Physiology and Pathophysiology course. The purpose of this study is to determine if a model of exam reviews conducted in small-groups led by second-year medical students (MS2) are more effective compared to faculty-led large-group review sessions.

Methods: We implemented and evaluated a new peer-led tutorial session the week before each MS1 physiology exam. For each exam review session, two MS2 physiology lead tutors coordinated and oversaw five MS2 general tutors. Prior to each exam, physiology lead tutors met with the course director, reviewed exam material, distributed high yield topics to the general tutors, and coordinated the exam review session. Each exam review session was taught in a small-group format, composed of five different rooms covering different exam-relevant topics. Each general tutor led a 20-minute small group review session: 10 minutes of review slides followed by 10 minutes of questions and explanations. After 20 minutes, MS1s were free to rotate to a different tutor covering another topic. MS1s also had the option to attend faculty-led large-group review sessions, where teaching faculty presented didactic material and fielded questions in the main lecture hall. Following the exam, MS1s evaluated the effectiveness of the peer-led review in comparison to the faculty-led review session, which were then compared against physiology exam scores. MS2 tutors also evaluated the review sessions and the impact of this format on their studies.

Results: In 2018, we implemented a new small-group-based, MS2-led pre-exam review session to supplement the existing large group, faculty-led pre-exam review session in the MS1 Medical Physiology and Pathophysiology course. Even though both pre-exam review sessions were non-mandatory sessions, 70% of students attended both sessions. 24% of students attended the MS2-led session only, while just 5% of students attended the faculty-led session only (N = 136). Both peer-led and faculty-led exam review sessions helped MS1 students identify strengths and weaknesses in physiology, improved understanding and ability to apply physiological concepts, and reduced anxiety regarding the upcoming exam. However, an aggregate analysis of the MS1 evaluations (N=147) revealed that 80% of students agreed that the peer-led sessions were more effective at accomplishing these objectives compared to the faculty-led review sessions. A large majority of students agreed that MS2s were acceptable alternatives to faculty members as review session leaders and felt the peer-led sessions were more effective than the faculty-led review sessions. The preference for the peer-led sessions was consistent, regardless of the organ system being reviewed. Importantly, MS1 students who strongly agreed that the small-group review session led by MS2s improved their understanding and ability to apply physiological concepts performed significantly better on the course exams ($p < 0.001$).

Potential Impact: We have successfully developed a new small-group format, peer-led pre-exam review session in UCI's Medical Physiology and Pathophysiology course. This format is now being broadly implemented throughout UCI's pre-clerkship curriculum.

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Active and Engaged Learning

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Workshop Description: Active learning and learner engagement are widely referenced in medical education circles. Is lecturing obsolete? Are interactivity and group work requirements for engaged and active learning? This interactive workshop explores some of the commonly used methods to deliberately introduce active learning and enhance learner engagement using a variety of instructional approaches.

Rationale: Active learning shifts the focus of learning – from passively digesting information to being accountable for actively engaging with the material and with other learners. It can help to maintain student concentration and deepens learning to higher-level skills such as critical thinking.

Learner Outcome Objectives:
1) Compare and contrast approaches to active learning; and
2) identify appropriate active learning strategies to optimize own teaching.

Intended Participants: Open to all who teach medical students, resident, and faculty.

Methods: Mix of small and large group activities.

Activity Timeline: Introduction (10 minutes); Small group activities to discuss active learning strategies (30 minutes); Regroup (5 minutes); Practice applying active learning strategies to own project (20 minutes); Large group report out of applications.

Take Home Tools: Summaries of learning principles and active learning strategies; and a plan to enhance own teaching through active learning strategies.

Gamification in Internal Medicine: How to Play for Success

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Workshop Description: Our workshop focuses on the implementation of gamification techniques as a novel approach to graduate medical education. We will briefly review key points of gamification; however, we will focus mainly on designing games and implementing them. We will play 3 learning games (in teams, as tables). After the three brief games, we will spend the bulk of our workshop in small groups developing learning games within the contexts of each participant's home institution.

Rationale: Gamification in medical education is growing recognition as a valuable curriculum delivery method. It provides a fun, competitive, and active means to deliver curriculum. When designed and implemented effectively, gaming can improve resident/student morale, foster healthy teamwork and competition, and provide a fun and engaging venue to promote scholarship. We have developed a myriad of learning games that are currently implemented at institutions nation-wide. We have studied and are continuing to study these worthwhile gamified methodologies. Thus far, we have demonstrated gamification to have an positive, statistically significant effect on learning climate, morale, motivation and engagement in the graduate and undergraduate medical domains. Our workshop is designed to briefly bring to light the benefits of gamification and to moreso demonstrate effective learning games and facilitate participants' creation of learning games and implementation plans for their home institutions.

Learner Outcome Objectives:
1) To identify and write down at least 1 setting in which gamification can be a useful curricular delivery tool within the participant's home learning environment.
2) To play 3 different learning games during the workshop, and, consequently, recognize the fun, engagement, and motivation that can arise from such.
3) To use a template to design a learning game and an implementation plan for at least 1 game to be played at their home institution, within 6 months of the IME conference.

Intended Participants: Any educator who is responsible for curricular delivery and would like to develop skills and templates for the integration of gamification into their repertoire of educational paradigm. We envision this to be program directors, associate program directors, rotation directors, clerkship directors, and core faculty who deliver curricula. We also invite chief residents and other resident leaders who are directly responsible for the learning environment and curriculum delivery planning.

Methods: A large group digital presentation will be shown to discuss the concept of gamification, benefits, and our observed outcomes of prior and our current study, thus far. Following the presentation, there will be a session where participants will briefly play 3 learning games (as a large group with individual tables as teams) and then facilitate participants' use of templates to develop their own games. If time becomes tight, only 2 games will be played, as, the emphasis here is on the actual development of an implementation plan and gamification templates for participants. We will circulate the room and provide guidance/feedback and suggestions to help new gamers navigate barriers. A group debrief will then take place for everyone to share experiences developing games and facilitate a large group discussion of pitfalls, concerns, and the future of gamification in Med Ed.

Activity Timeline:
10-minute – Introduction presentation
60-minute – Break-out groups session/learning games
15-minute – Group debrief and group discussion

Take Home Tools: 1) 3 templates for learning games. 2) An implementation plan for at least 1 learning game. 3) Gaming in Medical Education reference list; Contact information of all workshop leaders to further develop a community in gamification.

"What Should I Be When I Grow Up?" Mentoring Learners through Early Career Decisions

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Workshop Description: Feel lost about guiding your mentees as they explore the various options for the next steps in their careers? This ninety-minute, interactive faculty development workshop will introduce faculty mentors to methodologies that can be used to guide mentees in gaining a deeper knowledge of their personal and professional values, and provides tangible tools and resources for faculty to use with mentees as part of an individualized career needs assessment mentorship discussion.

Rationale: After nearly a decade or more of undergraduate and graduate medical education, the time comes for physicians finishing training to pursue their long sought-after careers. While the ACGME requires trainees have mentorship available, there is no specified quantity, quality, or focus of that mentorship that ensures learners receive adequate guidance on career development prior to graduation. Although trainees express strong interest career development mentorship, this specific type of mentorship is underutilized both in graduate medical education and academic medicine in general. The proposed workshop is an opportunity for faculty mentors to explore useful tools for the career development mentorship of trainees, particularly in identifying a mentee's guiding values, appraising the alignment of career options with those values, and performing a personal and professional needs assessment.

Learner Outcome Objectives: By the end of the session, participants will be able to:
1) Identify a mentee's personal and professional values using a "values auction" tool.
2) Analyze the alignment of a mentee's personal and professional values with their current and ideal careers.
3) Facilitate the completion of a formal personal and professional needs assessment to guide a mentee through identifying important next steps in their career trajectory.

Intended Participants: Medical education faculty members.

Methods: Participants will develop skills they can use to help their own mentees through a combination of self-reflection and peer mentorship with workshop co-participants. Several tools are introduced as methods for a mentee to understand themselves more deeply. Through facilitated interactive activities, as outlined below, participants will discover their guiding values and explore individual strengths/areas for improvement as part of a personal/professional needs assessment.
1) Activity 1: Participants individually complete the "Values Auction" worksheet. Small group co-participants practice giving each other feedback on their "Values Auction" as they would for an actual mentee.
2) Kinetic Activity: Participants move around the room, placing a mark on a line indicating how well the results of the Values Auction line up with both their current job and with their "Dream Career", and discuss the alignment of these values to their daily and "dream" career. A facilitated discussion regarding the use of self-assessment of values in guiding mentees follows.
3) Activity 2: Participants work in pairs to guide a volunteer through the completion of the Personal/Professional Needs Assessment, focusing on identifying important next steps in their career trajectory.

Activity Timeline:
00:00 – 00:05 Session Introduction; Goals & Objectives; Get to Know the Audience
00:06 – 00:10 Dream Job Ice Breaker
00:11 – 00:20 Brief Didactic- Introduce Tools & Resources
00:20 – 00:35 Activity 1
00:35 – 00:45 Kinetic Activity
00:45 – 00:55 Debrief

00:55 – 01:10 Activity 2
01:10 – 01:20 Small Group Report Out
01:20 – 01:30 Session Evaluation; Commitment to Act

Take Home Tools: Values Auction, Personal/Professional Needs Assessment

Resource List: MBTI, TKI, VIA character strengths

International Stakeholder Perceptions of Chiropractic Qualifying Examinations: Qualitative Analysis

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Problem Statement: International stakeholders' opinions about qualifying examinations (QE) are unknown, a critical omission when discussing standards and reciprocity.

Rationale: A QE is one that a candidate must pass to be eligible for licensure to practice in a jurisdiction and are typically administered during or after graduation. These examinations are not administered by the training program, but by an independent organization. Given the high stakes, stakeholders' opinions of QEs are important. Chiropractic is a relatively young profession, not present in all countries and continues to evolve in countries where it is present. Thus, some jurisdictions are confronted with the question of requiring a QE and how it might be implemented and other jurisdictions that have QEs may consider changing them. There are no studies that have researched stakeholder perceptions of QEs. It is conceivable that changes to QEs could be made with limited consideration of stakeholders. This study fills this void. The purpose of this study: to analyze perceptions of international stakeholders and to suggest how this information may be used when making future decisions about QEs.

Methods: Using literature from healthcare, sociology, and psychology, we designed a survey that included open-ended questions about benefits, myths, barriers, solutions, future, and opinions related to QEs. Demographic information was collected for country, name of qualifying board, and stakeholdership. The survey was validated and piloted on 12 international educators. The survey was then distributed via SurveyMonkey to 234 international stakeholders represented by the following: chief executive and chief academic officers of all chiropractic training programs worldwide, students from all international regions, faculty members of all chiropractic training programs, accrediting body representatives, licensing board associations, QE boards, chiropractic researchers, presidents of all national chiropractic associations, private practitioners, and patients. Written comments were extracted and then concepts were categorized and collapsed into four categories (benefits, myths, concerns, solutions). The first two authors then read the comments using an iterative process to identify patterns, themes, and categories. This list was then further distilled by the entire authoring team via dialog.

Results: The survey response rate was 56.4% (132/234 people, representing 43 countries) and 775 comments were extracted. Perceived benefits included that QEs certify a standard of knowledge and competency and are part of the professionalization of chiropractic. Myths included that QEs are able to screen for future quality of care or ethical practices. Concerns included a lack of standardization between jurisdictions and uncertainty about cost/value and what QEs measure. Solutions included suggestions to standardize exams across jurisdictions and focus more on competencies. Ten major themes emerged through qualitative analysis of the comments: 1) Cost of examinations; 2) Standardization of exams; 3) Quality/safety of care; 4) Alignment of curriculum, accreditation, and QEs; 5. Whether QEs should be required; 6) Accountability of QE organizations; 7) Validity/fairness of exams; 8) Communication between testing organizations and stakeholders; 9) Relevance of examinations; 10) Need to further explore competency-based examinations.

Potential Impact: This was an innovative way to discover international stakeholders' concerns. These findings may improve understanding of the place, necessity and relevance of QEs, and stimulate further collaboration between training programs and jurisdictions to aid in improving these exams throughout the world.

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A Redesign of the Pediatric Clerkship Orientation to Focus on Core Pediatric Concepts

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Idea: A redesign of the pediatric clerkship orientation to improve third year medical students' knowledge and confidence on core concepts in pediatric care.

Need: The clerkship orientation on the first day of the rotation is the one point during which all the medical students are together given the multi-site nature of the medical school. Traditionally, the orientation has served to introduce students to rotational requirements. The structure is lecture-based. Students often enter their clerkship feeling unprepared or uncomfortable with the service. There has been an expressed need from students and faculty on training in areas such as advocacy and social determinants of health, concepts that are not the traditional "shelf exam topics." There is also demand for discussion of uniquely pediatric concerns like vaccine hesitancy and developmental delays. In recognizing the need to prepare students entering their pediatric clerkship with topics at the core of pediatrics, we are redesigning the clerkship orientation session so that students can enter their clinical rotation with the knowledge and confidence to contribute to pediatric patient care. Focusing beyond simply course logistics would direct students to what is considered integral and unique to the field. Medical students are then empowered with an improved understanding and confidence in addressing uniquely pediatric topics from the very start of the clerkship. Furthermore, they may develop a deeper understanding of the field beyond its common diagnoses.

Methods: The pediatric clerkship orientation is the first day of the clerkship. This restructuring will transform orientation from lecture-based to small group discussions. The first hour will be similar to prior clerkship orientations, explaining to the students the course syllabus. Then, the students will be divided into five small groups and will rotate every half-hour for the remainder of the orientation half-day. Each small group session will be facilitated by one pediatrics faculty member. The session topics will address child health advocacy, development, vaccinations, well child care, and family centered care. These topics are seldom addressed in the preclinical years since the focus for medical students has been traditionally placed on adult patient care. Following each small group discussion, students will gain knowledge and confidence in that area of pediatrics. From advocacy, they will develop a toolkit about what general resources exist and how they can advocate for patient needs. From vaccinations, students will learn how to approach vaccine hesitancy. Well child checks will equip students with an understanding why anticipatory guidance is integral to pediatric care. For development, students will learn about the importance of the screening and surveillance of milestones with every child encounter. Lastly, students will learn how to deliver family centered rounds, a style of communication new to many medical students who learn the traditional oral presentation style.

Evaluation Plan: Paper questionnaires will be administered at the start and conclusion of the orientation session and the clinical clerkship to assess for change in individual knowledge and attitudes. At the start of orientation, students will complete pre-intervention knowledge-based questions. The post-intervention knowledge assessment will occur at the end of the pediatric clerkship to assess for retention. At the end of the orientation, students will complete a pre/post questionnaire assessing their level of understanding and confidence following the small group learning. This pre/post questionnaire will then be repeated at the end of the clerkship to assess the impact of the orientation session on their overall clerkship experience. Change in behavior will be measured from patient encounter logs that are completed by each student as part of rotation requirements; the control will be the patient logs of students prior to the introduction of this orientation redesign.

Potential Impact: By formally introducing students to what is unique and integral to pediatric care on day one, more students may develop interest in the field by viewing their clerkship experience through an informed lens. This can inform the efforts of other clerkships at ours and other medical schools.

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An Innovative Approach to Emergency Medicine Based Curriculum Development

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Idea: A cardiology module for physicians in the EM diploma program in Kenya as a pilot of an innovative approach to improve access to residency curriculum.

Need: The expansion of emergency care systems has been prioritized by the global health community due it's potential to reduce deaths and disabilities in Low-and Middle-Income Countries.1 Africa is emerging as a leader in emergency medicine (EM) education and development.2 With new EM residency training sites developing internationally, there is a demand for medical education targeted at training physicians as EM specialists. Lack of access to high-quality EM resident education curricula remains a barrier to the development of EM residencies. The US model of an EM residency curriculum that relies on a large core of academic faculty to develop and deliver educational content is not well suited for first-in-country training programs, which have limited access to EM faculty. Furthermore, the learning needs of EM residents may not be optimally addressed by currently prevalent educational paradigms that rely heavily on serial one-hour power point lectures.3 Our team initiated a project to create a toolkit of innovative EM resident educational resources that promote audience attention, critical thinking, and active learning, which may be used to support local educators teaching residents around the world. We worked with our partner site in Kenya, that has an established EM Postgraduate Diploma program, designed to provide additional EM training to full time physicians. A 2-week pilot of this approach was undertaken as a proof-of-concept during the cardiology block of their program.

Methods: In August of 2019, the cardiology module was developed and integrated into the 18-month EM Postgraduate Diploma program in Nairobi, Kenya at the Aga Khan University Hospital. There were seven general physicians roughly 3-5 years out of medical school enrolled in this program. The goal of this module was to improve both early recognition of cardiac disease and appropriate management of these patients in the emergency department. The cardiology module was taught over a two-week period, with one eight-hour class per week for a total of 16 hours. The curriculum utilized interactive teaching formats that encourage active learning and critical thinking including: 1) Student presentations: 15-minute chalk talks covering topics such as flash pulmonary edema and myocarditis; 2) Journal Club: discussion of the signs and symptoms of Hypertensive Emergency; 3) Visual diagnosis: review of various cardiology related diagnoses that can be made by visual stimuli; 4) Rotating small groups: case-based discussions of Brugada and aortic coarctation; 5) Deliberate practice with feedback: for teaching ultrasound to perform an echocardiogram; and 6) Games: Jeopardy style review of content. The cardiology module was given to the local director of the Kenyan program for use in future courses and the results of this pilot will be used to develop additional modules.

Evaluation Plan: 1) The module was reviewed by an expert for both process and content to ensure that best educational practices and key content were included. 2) Session evaluation forms were utilized to assess which teaching formats the students found most beneficial. 3) The knowledge of the seven learners was tracked informally along with each exercise so that the time and tools could be modified to meet the needs of the learners. 4) A post-test will be given five months after completion of the course in order to help evaluate the course's impact on student's knowledge of cardiac pathology and EM focused management of various cardiac disease processes. In addition, a questionnaire will be administered to gather specific examples about how the participants have utilized the new knowledge to change their behavior in clinical practice.

Potential Impact: If this curriculum is effective, it could provide a model that may be expanded to improve the delivery of EM residency education in places that lack current access to traditional EM training paradigms.

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Do We Really Need That? Making a Case for the Humanities in Human Medicine

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Idea: Establish a community hospital based Office of Multicultural Affairs (OMA) that will serve to develop an integrated cultural medicine curriculum.

Need: An inclusive and culturally sensitive environment improves learner-provider-patient well-being, but often we do not invest in developing the skills and structures that are needed in order to maintain such an environment. I propose a novel approach to supporting community hospital and medical education missions to maintain a culture of diversity and inclusion through the establishment of a community hospital based Office of Multicultural Affairs. Such an office will expand humanities content and methods to enhance multicultural education and resources in the service of faculty, learners and staff at all levels in the organization. Such alignment will enhance community hospital efforts to maintain a diverse workforce and culture of civility, and will expand stakeholder's cultural sensitivity, wellness and quality of patient care experience. It is widely held that bias, prejudice and stereotyping by medical students, educators and providers contribute to differences in care, and further, that these differences often express themselves in suboptimal patient experience and outcomes. I do not dispute that medical education and healthcare understand the need for cultural sensitivity; however, I posit that many efforts to date are fragmentary and too often terminal. Thus, I propose an integrative and sustained approach that is accessible, interactive, sustainable, and transformative throughout one's career and available at all touchpoints in the organization.

Methods: Several modalities common in the humanities will be offered to encourage reflective practice. For example, Visual Thinking Strategies (VTS) will be used to identify the unconscious preferences, biases, and filters through which we view, assess, and evaluate others. In so doing, participants may learn to mitigate bias in order to meet the needs of others in the context of the power imbalance inherent in the patient-educator-physician-health profession staff relationships. Establish, implement and maintain structure and processes to increase coverage of the humanities in medical education and healthcare at large in so doing, augmenting student-cum-providers critical thinking, visual intelligence and cultural sensitivity in delivering high-quality patient care. Strive for sustainability and stability. Address short-term tactical concerns (i.e. the challenges, monetary and structural, of implementing OMA). Focus on actions and interactions that effectively engage people, programs and processes to achieve a shared vision.

Evaluation Plan: Demonstrate ROI and ROE of OMA to hospital leadership. Securing buy-in and financial support for establishment of a 3 year pilot OMA. Launch OMA and begin to assess efficacy in years 2-3 using data collected through participant surveys, patient satisfaction and referral metrics, community wellness reports and recruitment and retention.

Potential Impact: Implementation of these changes will highlight both barriers and successes that can inform the efforts of other institutions to improve culturally responsive care for all community stakeholders (learners, faculty, staff and patients).

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Enhancing Student Learning in the Affective Domain within the Doctor of Pharmacy Curriculum

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Idea: To determine an effective method to teach and assess learners in the affective domain to ensure pharmacy students are empathetic professionals.

Need: Empathy is an essential quality that all health care professionals should display when dealing with patients and there is both a need and an opportunity to address empathy within health care curriculums.1 Traditional science-based curricula rely heavily on the cognitive and psychomotor domains of learning, leaving less time to emphasize the affective domain of development. The affective domain focuses on the attitudes, behaviors and beliefs of an individual. Maturation of health professional students in this domain is essential to developing morally competent health care professionals.2 Additionally, data suggests that health care professionals with higher degrees of empathy and “soft” skill sets have demonstrated improved patient adherence to therapies, reduced adverse outcomes and have a decrease in malpractice lawsuits.3 Currently, there is a gap in the literature regarding a standardized model to teach and objectively assess students in developing and sustaining empathetic skill sets. Specifically, long-term assessments that follow learners longitudinally to determine if these skill sets have been maintained and used in clinical practice have not been robustly studied. This study aims at developing an objective method of teaching pharmacy students’ empathic communication skills and sustaining these skills throughout their pharmacy school tenure to develop morally competent, empathetic, practice ready professionals.

Methods: This study will be divided into 3 phases. In phase one, a didactic lesson on empathic communication using a team-based learning pedagogy will be delivered to teach learners foundational knowledge and skills in self-awareness and awareness of others. To assess baseline empathy, learners will be assessed through an objective structured clinical exam (OSCE) with a standardized patient (SP). During the OSCE, learners will be tasked with delivering difficult news to their patient. Following the encounter, learners will use the Jefferson Scale of Empathy (JSE) to rate their own perception of empathy and the SP will also use the JSE to assess the student’s empathetic communication skills. In Phase 2 and 3 of this study, pharmacy students will build upon their foundational didactic experiences and directly provide empathetic care to a patient they observe during their introductory and advanced pharmacy practice experiences. Learners will engage in self-reflections and group reflections to discuss their experiences. Learners will then once again participate in an OSCE with an SP as described in part one of the study to provide a second and third data point that demonstrates the learners’ perception of their empathy as well as the SP’s assessment of the student’s empathy. Data across all three parts of this study will be compared to determine if changes in empathy scores are observed and if students’ perceptions of their skill sets differ from those perceived by SPs.

Evaluation Plan: The JSE will be the standard evaluation tool used to determine changes in empathy pre and post interventions in part I, II and III of this project. SPs will be trained to use the Jefferson Scale of Patient Perceptions of Physician Empathy (JSPPPE) to provide an objective measure of pharmacy students’ empathic communication skills while learners will use the Jefferson Scale of Empathy-health professional student version (JSE-HPSE) to self-evaluate their affective skill sets. Differences in empathy scores for the JSPPE and JSE-HPSE will be compared for each student across the duration of the study. Additionally, standardized rubrics will be used throughout the project period to consistently assess learner competency and growth in regard to reflections, group activities and course assignments. The assessment methods described will provide a consistent form of measurement to evaluate changes in empathy and a sustained ability to utilize the skills learned during each intervention period.

Potential Impact: Results will be used to enhance health science curricula to include empathy as a necessary skill to be a practice ready health professional. This study will be extended into clinical settings to determine if providers can affect objective health outcomes by providing empathetic care to patients.

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The Great Debate: Teaching Medical Students Ethical Decision Making

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Idea: We created a debate style ethics seminar for third year medical students to discuss two ethically-fraught psychiatric cases during their clerkship.

Need: The Liaison Committee on Medical Education requires each medical school "ensure that the medical curriculum includes instruction for medical students in medical ethics and human values." (LCME Functions and Structure of a Medical School, 2018) Previously, the psychiatry clerkship included a twenty minute individual session to discuss an ethically-complicated case; however, this session also included discussion about the medical student's upcoming Objective Structured Clinical Examination (OSCE). Evaluations from students highlighted the usefulness of the information given for the OSCE, but did not mention the ethical discussion. Upon review of the objectives that had been approved by the Humanities, Ethics/Economics, Arts and the Law (HEAL) Program, it was clear that they were not being met and revision of the ethics seminar was needed.

Methods: Dr. Kai-Hong Mao, the newly appointed Keck School of Medicine Psychiatry Clerkship Director, enlisted Dr. Susie Morris, who received her Masters in Medical Humanities and Bioethics at Northwestern University Feinberg School of Medicine during her medical school education, to assist with creating a new and innovative ethics seminar that would engage medical students in thoughtful discussion. The seminar would be held once during each of the psychiatry clerkship rotations, seven in total annually. Together, they created a debate-style ninety minute session with the objective having the students be able to compare and contrast the ethical and legal considerations of two real life psychiatric cases. Another objective of the seminar was to have the students articulate ethical reasoning behind clinical decisions rendered on behalf of patients with mental illness who are involuntarily hospitalized and/or refusing medical interventions. Students would be randomly assigned a "side" to debate regardless of their own personal beliefs. After preparing with their assigned group, the student would engage in a debate that included an introduction, cross-examination, and closing statement. A debriefing would end the session to help students process their feelings about the exercise.

Evaluation Plan: The newly developed ethics seminar was first implemented on July 16, 2019. All medical students that were on the psychiatry clerkship at the time were in attendance. The students were noted to be actively engaged throughout the seminar, highlighted by how heated their debate became and how frequently they cited the pillars of medical ethics. Students mentioned their discomfort in creating a sound argument for a position with which they did not agree. This sparked discussion about the moderators own discomfort with the outcomes of the real life psychiatric cases. Dr. Pamela Schaff, the director of the HEAL Program, was in attendance and remarked that she had "rarely seen that degree of engagement and excitement in a classroom setting in the third year." She also commented on how the session pushed students to "try on perspectives other than their own, and to invoke their prior learning." Evaluations of the seminar will be collected at the end of the academic year.

Potential Impact: This ethics seminar will contribute to the participating medical students' ability to critically assess all ethical and legal considerations of future ethical dilemmas.

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Do or Tell: Fun, Interactive Games that Connect Residents to Patients

Dyer, Ashley; Golek, Hayley
HonorHealth

Idea: An innovative model designed to help medicine residents cultivate a more personal connection with their patients on a busy inpatient rotation.

Need: Bedside rounding can be overwhelming for residents and patients. Residents are focused on knowing medical details on every patient, and patients may feel intimidated by having the entire medical team enter their room and discuss their care. With the rise in physician burn out and increased awareness of necessary physician wellness, our goal is to move the focus from the medical minutiae to connecting with the patient as a person by developing an initiative called, “Do or Tell,” that makes bedside rounding more fun and interactive. This entire process will be carried out with the team during daily walking rounds.

Methods: This intervention will involve the residents on their inpatient rotation during daily walking rounds. There will be two envelopes filled with prompts for patients to select from. One will be filled with “tell” items; question prompts not medical in nature. For instance, “If you could have dinner with anyone from history, who would it be and why?” The second envelope will have “do” items to choose from; brief activities or games that can be played with the patient and the medical team. Examples include hangman or building the best paper airplane. Once patients have agreed to participate, the patient will select whichever envelope they prefer and then the question prompt or activity will be randomly selected by the resident. This entire process will be carried out with the team during daily walking rounds. Initially, each resident will be required to participate in this activity with one patient per week. However, residents may also elect to choose additional patients to engage with. There are four residents on this rotation each month, and each resident will be required to ask at least one patient per week to participate in the intervention.

Evaluation Plan: In order to assess the success of our “Do or Tell” initiative, we plan to survey all participating residents. Each month, there are four residents on our hospital service, two seniors and two interns. Each resident will be required to choose at least one patient per week during their rotation to engage with using our “Do or Tell” model. Each of the residents will complete the Professional Fulfillment Index, a validated tool, before and after their rotation (1). They will also complete a narrative summary at the end of their rotation. Results will be collected monthly, analyzed every three months, and then finally reviewed and analyzed nine months after implementation.

Potential Impact: This intervention will improve joy in practice, decrease burn out and improve wellness for residents as well as add meaning to their work.

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Medical Student Progress and Perceptions of a Student-Run Point of Care Ultrasound Interest Group

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Problem Statement: The effectiveness of a medical student-run point of care ultrasound curriculum has not been well-characterized.

Rationale: Point of care ultrasound (POCUS) is rapidly developing into a core skill expected of residents in numerous specialties. In addition, various residency programs now require ultrasound scanning for graduation. These changes make it essential that medical students receive high-quality training in POCUS to prepare them for residency. While POCUS has been integrated into the formal curricula of some U.S. medical schools, it continues to be infrequently and informally taught at many others, with these efforts largely being faculty-driven. The purpose of this study was to assess the improvement in ultrasound knowledge and comfort levels in undergraduate medical students at Vanderbilt University School of Medicine (VUSM) who participated in the student-developed and student-run POCUS interest group. We also assessed the students' perceptions of the curriculum and format of the interest group in an attempt to improve the way that ultrasound is taught in undergraduate medical education.

Methods: Curriculum development focused on teaching basic ultrasound physics, proper machine use, probe selection, and scanning technique, as well as five POCUS examinations (FAST, Aorta/IVC, Thoracic, Renal, and Cardiac Echo). Emergency medicine physicians with fellowship training in POCUS were consulted for quality assessment of didactic material. Students were recruited in two phases over twelve months, with the studied cohort totaling 60 students. Seventeen students who previously completed the curriculum served as teachers for scanning sessions. Pre/post-tests were designed by students and reviewed by ultrasound faculty. Students were assessed using pre/post-tests before and after each peer-taught, hands-on ultrasound session. Analysis of variance (ANOVA) was performed to assess pre- and post-test score differences for each scanning session. Student-perceived levels of comfort with performing ultrasound examinations before and after the POCUS education sessions were assessed using a 7-point Likert scale. ANOVA analysis was performed to assess pre/post-session comfort level differences for each scanning session. An anonymous REDCap survey was sent at the end of the 12-month period to assess overall satisfaction with POCUS education and satisfaction with peer teaching. 50 students responded to the survey.

Results: Of the 50 REDCap survey respondents, 12 (24%), 15 (30%), 17 (34%), and 6 (12%) were 1st, 2nd, 3rd, and 4th year students respectively. Overall, 91.7% reported being satisfied or very satisfied with the didactic material, 93.7% were satisfied or very satisfied with student-led hands-on training sessions, and 94% were satisfied or very satisfied with the quality of peer teaching. While 94% of students reported being satisfied or very satisfied with the program overall, only 39.6% were satisfied with the amount of faculty involvement. After completion of at least one didactic and hands-on session, 42 (85.7%) of students reported feeling comfortable or very comfortable with using an ultrasound machine. After completion of the following one-hour scanning sessions, students reported feeling comfortable or very comfortable performing the scan: 71% (FAST), 71.1% (Renal), 61.7% (Cardiac), 60.5% (Thoracic), and 50% (Aorta and IVC). The ANOVA analysis for the difference in means of the pre- and post-test scores showed significant P values ($P < 0.001$) for all five scanning session categories. In addition, ANOVA results showed that students' reported comfort level with scanning improved significantly ($P < 0.001$) from the pre-session assessment to the post-session assessment for all five scanning sessions.

Potential Impact: Our data demonstrate that a student-run POCUS group can provide introductory education for basic ultrasound skills with a high percentage of student-perceived effectiveness and satisfaction. We hope our curriculum can provide a framework for other student-run groups to promote ultrasound education.

Supplementing Medical School Curriculum with Student-Led Professionalism and Diversity Initiatives

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Problem Statement: A formal curriculum is often insufficient to optimize student development in areas of professionalism. Complementary informal experiences are needed.

Rationale: Opportunities to grow professionally are important parts of preclinical medical education. However, development of professionalism competencies can be difficult to support through formal training alone. In response, the University of Utah School of Medicine (UUSOM) created student-led Professionalism and Diversity Committees (P&D) to create workshops for students to develop within class cohesion, a relevant aspect of professionalism (increase awareness of personal bias, understanding the benefits of diversity within learning communities, etc.). Each committee, one per entering class, consists of 20-30 students.In this innovations report, we present results of an evaluation of the effectiveness of the Committee in promoting 1st-year student professional development as evidenced by the growth in their class cohesion, using the conceptual framework of Tuckman's stages of group formation. We defined effectiveness as movement to later stages attributed, in part, to committee interventions.

Methods: This was a single-center study of 2nd-year medical students at UUSOM.We designed, piloted, and administered a survey: Part 1 asked students to rate their level of comfort at the present time addressing 10 issues or conflicts with patients and/or classmates from diverse backgrounds (1=Very Uncomfortable, 5=Very Comfortable). Part 2 asked students to rate their level of comfort doing each of the above behaviors at the present time compared to one year ago (less than, about the same, more than). Part 3 asked students to distribute 100 points amongst various curricular and non-curricular interventions (some sponsored by P&D), to show the relative influence of each intervention on their general level of comfort as expressed in previous responses. The survey was designed with the intent to understand the effectiveness of P&D within the scope of the medical school curriculum. This "retrospective pre-post design" is ideal to avoid over or under-estimating abilities on the pretest in traditional pre-and-then-post approaches, distorting the difference between pre and post-program. We used the Tuckman stages of group development to interpret survey results. This model suggests that forming, storming, norming, and performing are four inevitable stages of group development. Independence and cordiality dominate the forming stage, while the storming phase leads to disagreements resolved during norming. It culminates in the performing stage by establishing group norms and a common goal.

Results: Eighty-nine surveys were returned (71%). Overall, students were "comfortable" or "very comfortable" with most statements. Students reported feeling most comfortable while "working with classmates who have different cultural backgrounds" (4.48/5, Likert Scale) or "respecting opinions that may be different than my own" (4.38/5). On average, students were least comfortable when "sharing differing opinions" (3.08/5) and "engaging in conversation with classmates whose opinions differ from my own" (3.44/5). For all statements except one, comfort levels improved over time. However, when asked about "sharing differing opinions" a majority of students reported either no change in comfort levels or decreased comfort after one year (67.4%). Small group activities were rated the most impactful for inciting medical student growth, as students assigned the most points to small groups that focused on difficult or controversial topics in medicine (25.6/100.0). However, a majority of students still feel uncomfortable sharing their opinions or conversing with others whose opinions differ. We suspect that this finding is an expression of group behavior, as described in Tuckman's first and second stages of group development (forming and storming, respectively). While in other aspects, students may have moved to norming due to different groups and activities they have participated in.

Potential Impact: Informal interventions, sponsored by Professionalism & Diversity Committees may represent an acceptable supplement to formal curriculum. Creating spaces for students to 'storm, norm, then perform', may promote increased group cohesion (as evidence of professionalism competencies).

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Unique Exposure to Ultrasound in Pre-clinical Undergraduate Medical Education

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Problem Statement: Descriptive case study of pre-clinical ultrasound education at the University of Nevada, Las Vegas School of Medicine.

Rationale: Point-of-Care Ultrasound (POCUS) is increasingly valued across medical disciplines. As benefits of ultrasound are recognized, so too is the need to integrate ultrasound into undergraduate medical education (UME). Early exposure contributes to ease of use during clinical rotations. Our objective is to describe the integration of POCUS before clinical immersion and how efforts were perceived.

Methods: 58 medical students participated in a hands-on training session before initiation of clerkship duties. A brief didactic introduction for ultrasound techniques began each session. Students were divided into duos and rotated through 6 stations designed to provide training in ultrasound of the abdomen, head/neck, and cardiac. Each station consisted of a clinical scenario, ultrasound machine, standardized patient/model, and instructor. Student feedback was collected via 6-point questionnaire at the end of the session.

Results: 58/58 students completed the survey, positively evaluating clinical relevance and student satisfaction. 58/58 students answered “yes” that “the session met the stated learning objectives,” 57/58 answered “yes” that “the learning environment was conducive to my acquiring new skills.” Comments were entered in an optional field with the descriptors “great” and “helpful” trending throughout feedback, indicating high student satisfaction.

Potential Impact: UME is changing, with new challenges to prepare students for clinical years. The overwhelmingly positive feedback for our session indicates integrating POCUS as an educational tool with hands-on ultrasound practice can provide engaging and applicable skills for medical students.

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Comprehensive Approach to Technology Integration in Undergraduate Medical Education

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Idea: Descriptive study of the University of Nevada, Las Vegas School of Medicine's unique incorporation of technology in undergraduate medical education.

Need: Most efforts to incorporate evolving technological advancements into undergraduate medical education (UME) have traditionally been implemented through a top-down approach (from administration to students). This generalized approach stems from medical schools or affiliated organizations adapting curriculum to the new generation of learners by incorporating technology to enhance learning. There has been little academic discussion on how new technology can influence and enhance medical education from a bottom-up approach (from students to administration), and how this approach uses technology-based communication to affect the educational experience. Identifying distinctions between these technology-utilization approaches in UME is important in order to understand how to efficiently and effectively strike a balance for the benefit of students, faculty, and the medical community. The University of Nevada, Las Vegas School of Medicine (UNLV SoM) utilizes both a top-down and bottom-up approach and sets an example for how technology incorporation from both approaches can be used to enhance medical education.

Methods: We aimed to categorically describe the technology utilized at UNLV SoM. Those in the top-down category were administration-established implementations. Those in the bottom-up category were student body-established implementations. We then noted which technology enhancements resulted in improved communication or bidirectional information sharing, versus those that only provided new ways to learn information. The reasoning for analyzing the technology resources for features that improved communication or bidirectional information sharing is based on the idea that these features can often offer benefits to education in ways that are usually not measured or valued when potential new technology implementations are being considered.

Evaluation Plan: UNLV SoM's inaugural class of medical students enrolled in 2017 and its implementation of technology-innovative curriculum is evolving, subject to continued evaluation by the administration and student body. Currently, 4 sources of technology-utilization fall into the top-down approach category: Virtual Anatomy, LCMS, live-update scheduling for clerkships, and a health science library which provides online resources and clinical point-of-care tools. The bottom-up approach currently has 3 sources of technology-utilization: Slack, Google team drives, and Whatsapp. In the top-down approach, 0 of the 4 sources facilitate open communication or bilateral information sharing, while in the bottom-up approach, 3 of 3 do. For this extended case study, resources will continue to be consistently monitored and categorized as top-down or bottom-up, in order to determine which technology-utilization approaches are most helpful.

Potential Impact: While medical education's adaptation of technology-utilizing curriculum is important, understanding what technology resources the student body can implement is also important. UNLV SoM demonstrates how technology incorporation from a top-down and bottom-up approach can enhance medical education.

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Pre-Clinical Exposure to Research in Medical School and their Outcome on Scientific Productivity

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University of Las Vegas, Nevada School of Medicine

Problem Statement: Descriptive case file of the University of Nevada, Las Vegas School of Medicine's (UNLV SoM) team research model and increased productivity.

Rationale: Barriers to research include lack of opportunities, knowledge deficits, mentor shortage, time constraints and insufficient administrative support. At the newly established UNLV School of Medicine, early incorporation of a team research model was valued. A research model with objectives, time tables, and mentor identification were created. These student participated in research in the summer months prior to second year matriculation and further research opportunities were created with a group of five other students. One physician mentored all five students and set up regular meetings for advising and guidance. All other students participated in research individually with their mentor. The aims of this study were to determine the short and long-term influence of curricular and extracurricular (team research model) undergraduate medical research on the scientific productivity of medical students, measured by the number of published manuscripts, poster presentations, and abstracts.

Methods: Research activity by students was gathered. This included the number of projects per student, as well as abstract presentations in poster or oral format at regional, national, and international meetings. Journal publications was also calculated. We further compared students in the team research model to those performing only individual projects.

Results: 51 students participated in a survey regarding the number of projects per student, as well as abstract presentations in poster or oral format at regional, national, and international meetings, and journal publications. Compared to the team research model of five students and the rest of the students individually, each student that was a part of the team research model had a statistically significant $p<0.05$ greater number of total projects, abstracts, and published research as compared to individual students in the charter class. A fisher's exact test was used due to the small sample size. On average, the students in the team research model had an average of six total projects as compared to an average of one project for the individuals that were not a part of a team research model at the time of survey which was done at the beginning of the third year of medical school. The survey will be repeated again at the beginning of fourth year when students are preparing for residency applications and once more at the end of the fourth year of medical school.

Potential Impact: Team research models can be enhanced by curriculum infrastructure. Mandatory projects can ensure some baseline knowledge and exposure for students. Supplemental team research offers peer support and increases productivity for students which in turn may lead to more reflective academic career choices.

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Building Education Research Capacity in Chiropractic: A Qualitative Analysis from a Workshop

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Idea: At present, the chiropractic profession does not have an agenda to build education research capacity. We need to identify potential solutions.

Need: Education research examines education and learning processes that shape educational outcomes. Chiropractic education research is fundamental to improving education programs and ultimately the quality of care that the chiropractic profession provides to patients. Up to this time, there has been little attention given to education research. Research capacity building is "… a process of individual and institutional development which leads to higher levels of skills and greater ability to perform useful research." This process is complex and includes many factors such as funding, skill-building, mentorship, development of research culture, institutional and administrative commitment. Therefore, the purpose of this qualitative study was to identify barriers and solutions to building education research capacity in the chiropractic profession.

Methods: We used a deductive approach to this qualitative study. Information was based on a prior survey (SurveyMonkey) that was distributed to the international research and academic community. Participants provided consent and demographic information. Open-ended questions related to general research capacity. The survey resulted in 144 participants from over 60 programs or institutions. Barriers mentioned included lack of: funding (103), infrastructure/training (76), research positions and programs (74), research culture/mentorship (66), value/support for research (62), collaboration (57), and direction (20). Survey comments and focus group leader summaries included these solutions: increase training; develop resource and funding infrastructure; develop inter and intraprofessional collaborations; improve research agenda; develop research infrastructure within educational institutions; and develop a culture to use and understand research. For the present study, a workshop was delivered by a team of experts at the largest North American research conference in 2019. Participants completed worksheets on education research domains: 1) developing collaborative relationships among chiropractic programs; 2) increasing skills/knowledge; 3) improving culture and value; 4) developing resources; and 5) improving funding. This study received prior IRB exemption. Written comments were extracted and concepts were categorized.

Evaluation Plan: The results of this project included the following. The 33 workshop participants, representing faculty, administration, students, researchers, and practitioners, provided 85 comments on building education research capacity. Themes specific to education research capacity building included: increase inter- and intra-professional relationships; develop a communications infrastructure; establish an education research agenda; establish an education research skills-building program; develop a culture of interest, support, and reward; and identify resources needed. Overarching solution domains included: 1) training faculty (funding for training, degrees in education); 2) giving faculty support (funding, resources, time); and 3) providing faculty with the environment to do education research (academic leadership support, library resources). Contributors volunteered to participate in future project proposals to build research capacity.

Potential Impact: Potential solutions to develop education research capacity were identified by a diverse group of constituents. The findings were mainly related to infrastructure and training. This information will help inform profession-wide efforts to improve chiropractic education research capacity.

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Librarians as Partners in Medical Education Scholarly Activity Initiatives

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Idea: Health sciences librarians can partner with medical educators to prepare residents for scholarly activity.

Need: ACGME program requirements mandate that residency programs have residents participate in scholarly activity, such as producing conference presentations and scholarly publications. Many specialties have particular requirements for scholarly activity participation. In order to meet ACGME requirements for scholarly activity, medical educators are developing initiatives to prepare residents to participate in scholarly activity. Such initiatives can lead to an increase in the number of conference presentations and scholarly publications by residents. These initiatives can also prepare and encourage residents to participate in scholarly activity throughout their careers. Some of the skills needed to participate in scholarly activity, such as best practices for communicating and disseminating research, fall outside what is typically taught in medical education curriculum. With expertise in scholarly communication, health sciences librarians can fill this gap in medical education. In addition to providing instruction in areas traditionally taught by librarians, such as database searching and citation management, librarians can also teach other components of scholarly activity. Library workshops on topics such as designing posters, creating slide decks, selecting a journal for publication, writing and publishing case reports, and writing conference proposals enable residents to learn best practices for communicating and disseminating their research.

Methods: At Temple University Health Sciences Libraries, we support scholarly activity in medical education through our instructional program. We teach elective workshops in the library, create customized workshops for specific programs, and provide video recordings of workshops. Our workshops include traditional library instruction topics such as PubMed searching and citation management as well as newer topics such as research data management and data visualization. In order to prepare residents to be effective scholarly communicators who can participate in scholarly activity, we also teach workshops that focus specifically on scholarly communication. Librarians developed these workshops in conjunction with program directors in specialties such as Anesthesiology and Thoracic Surgery. Workshops are typically one to two hours in length. Longer workshops allow more time for active learning, so residents can participate in hands-on activities. Topics for these librarian-led workshops include: designing conference posters, writing conference proposals and abstracts, creating slide decks, avoiding plagiarism, avoiding predatory journals and predatory conferences, keeping current in biomedical literature, writing and publishing case reports, understanding systematic reviews, and creating data collection tools in the REDCap system.

Evaluation Plan: We ask workshop participants to complete an evaluation form after each workshop. The form asks participants to evaluate: expectations for the workshop and if expectations were met; likelihood of recommending the workshop to others; effectiveness of the presentation of the material; and likelihood of using what was learned in the workshop. The evaluation form also provides an opportunity for participants to suggest ideas for additional workshop topics. Librarians use this feedback to determine if follow-up is needed with residents. Librarians also use the data from the evaluation forms to create new workshop topics and to revise existing workshop activities, length, and format.

Potential Impact: Scholarly communication and research skills are crucial for residents to effectively participate in scholarly activity. Librarians can teach these skills to residents in workshops that are integrated into their specialties. Librarian-led workshops help create an environment for scholarly activity.

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Required Courses on the Ethical Conduct of Research for Participants in a Summer Studentship

Hodgson, Carol; Birkman, Clair
University of Alberta

Idea: Formal, required, courses to teach students and supervisors participating in a summer research studentship about the responsible conduct of research.

Need: The University of Alberta's Faculty of Medicine & Dentistry's IDEAS Office offers a yearly Health Professions Education (HPE) Summer Studentship grant program. Through this program, students receive a stipend to participate in a summer research or curriculum evaluation project. The program has been in existence since approximately 2009, and administered by its current leadership since 2011. The Responsible Conduct of Research courses were developed because there was evidence that there were a number of problems with the program: little rigor in many studies; project supervisors who never met with or supervised their students; and there were issues with the ethical conduct of the students' research, by both supervisors and students. A supervisor allowed students to publish with no supervision or oversight even though the faculty member was an author on the manuscript. Students attempted to publish studies that they had no authority to publish and included information about patients without consent. Students conducted studies with little or no experience or training in research, often with no supervision. For this reason, two required courses were instituted on the responsible conduct of research, one for supervisors and another for students participating in the program. The supervisor course was required for all new supervisors in the program. The student course was a requirement for all students who received a stipend for participating in the program.

Methods: The HPE Summer Studentship students are usually health professions students (usually first- or second-year medical students or early students in the med lab science program). Studentships are usually two-months long, but range from 2-4 months. In 2013, we developed a four-day student course, 1 hour/day. In 2018, it became a five-day course, 2 hours/day. A one-hour supervisor course was first implemented in 2013. The next year (2014), the supervisor course increased to two hours. The content of the courses include: the research environment and research responsibilities (student and supervisor courses); efficient literature searching; introduction to research design; introduction to data analysis (qualitative and quantitative); research ethics; what to do once you have research results, including dissemination; authorship (student and supervisor courses); and successful writing methods. Along with the course content, each student is required to complete the US human subjects CITI course or the Canadian Tri-Council online human ethics course. There is no requirement in Canada that researchers complete an ethics course to conduct research. The courses include lecture with discussion and case-based discussion. The students complete a computer-based, hands-on, data cleaning and introduction to data analysis session using SPSS. In September each year, students are required to submit a two-page summary of their project and to present their work at a local FoMD conference.

Evaluation Plan: We ask the students a number of questions: amount of research experience; how many times they've met with their supervisors; and how often they meet/speak with their supervisor in a week. A requirement is that the supervisor(s) meet with the student at least 4 hours/week. Each year, most students report: little or no experience conducting research; little or no knowledge of research ethics, authorship, or in presenting or publishing. There is usually 1-2 of the 6-8 students, who've had some research experience. A number of students had been in their studentship for a month and they had not yet met with their supervisors. Almost no students report at least 4 hours of supervision/week. From level of engagement, the most useful session – for students and supervisors - is the discussion about authorship. One faculty member said, "I wish I had learned all of this earlier in my career." An online course evaluation is available; however, most students do not complete the evaluation.

Potential Impact: The greatest impact is that there have been no reports of unethical behavior with respect to publishing. Students and supervisors are trained on their student/supervisory responsibilities. Students receive certificates in human subjects training and face-to-face training in research ethics.

Medical Education as a Focus of Medical Student Scholarly Activity

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Idea: Design a medical education track for student scholarly activity requirement.

Need: As part of curriculum reform, completion of a 12-weeks of Scholarly Activity track became a requirement for graduation at UT Southwestern Medical Center (UTSW). Scholarly activity typically invokes the image of bench or clinical research among both faculty and trainees. Physicians are charged with educating others throughout their careers and a small number of students will be interested in pursuing scholarly activity in the field of education. Within the Medical Education track, clinician educators provided mentorship to students across a variety of projects. Implementation of a new curriculum offered significant opportunities for scholarly projects in areas of program evaluation as well as curriculum design and assessment. To date, both faculty mentors and students rate the experience highly.

Methods: As part of curriculum reform at UTSW in 2015, 12-weeks of Scholarly Activity became a requirement for graduation to be completed in the clerkship period. Students can select from several tracks, including a Medical Education track and are expected to engage in a project that is intellectually challenging and provides the opportunity to engage in scholarly inquiry resulting in a 5-10 page thesis. Appropriate mentors and projects related to medical education, across medical disciplines, were identified. Projects fell into several categories: improvement of existing curriculum, creation of new curriculum, assessment of curriculum, statistical modeling of educational outcomes (primarily Step 1), effectiveness of simulation and other technologies and literature reviews. Students are also given the option of designing their own projects and appropriate mentors were identified with the input of the track director.

Evaluation Plan: A total of 14 students have started and/or completed scholarly activity in medical education in the graduating classes of 2019 and 2020. Four additional students from the class of 2020 will begin projects in January 2019. This represents about 4% of students in these cohorts. To date, faculty mentors and students rate the experience highly. Further investigation is currently being done to maximize opportunities for new medical education-focused students, including improved mentor training and additional areas of interest.

Potential Impact: Clinician educators appreciate the opportunity to mentor students who bring additional time and effort to the project. For medical schools considering implementing a Scholarly Activity requirement, inclusion of a medical education track should be considered.

Simulation Training in Obstetrics & Gynecology:
Fostering Preclinical Skills and Career Development

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Idea: A novel simulation-based procedure course in Obstetrics and Gynecology for preclinical MD students to enhance clinical skills and career development.

Need: Our course exposes preclinical MD students to surgical skills, outpatient procedures, and clinical reasoning, using a simulation-based teaching framework. When medical students gain tangible skills through simulation, their confidence in procedures and interest in pursuing surgical specialties has been shown to increase (1). Simulation helps students visualize themselves in certain areas of medicine and enhances self-efficacy and meaning. Research shows that physicians' ability to focus on the aspect of work most personally meaningful to them, or "career fit," inversely relates to burnout (2). These hands-on learning and career-affirming experiences are limited at the preclinical level since students minimally engage in clinical medicine and are still developing their professional identities. It can be stressful for students to choose their career paths with limited information and opportunities for exposure. This course mitigates this with direct hands-on exposure through simulation, faculty mentorship and oversight, and information about medical, surgical, and interpersonal aspects of patient care. This course increases awareness of clinical issues specific to women's health for students at the beginning of their careers when they are the most eager to gain clinical skills. Although this course is focused on skills required to work as an ObGyn, the knowledge and skills that students will gain are transferable as they address fundamental aspects of clinical care.

Methods: This course capitalizes on the diversity of topics, medical and surgical skills, and scholarship that are inherent within Obstetrics and Gynecology. This course will involve first and second year MD students who have not yet participated in clinical rotations. Each of the eight weekly two-hour sessions will include a lecture and simulation component designed to 1) address critical medical knowledge and procedural skills gaps in ObGyn, and 2) expose students to pertinent procedures that fall under these domains through simulation-based teaching. Each lecture and simulation session will be led by a physician expert in that area. What sets this course apart is that it allows students to become active learners through the emphasis of a robust procedural, simulation-based experience that focuses on learning and practicing hands-on skills (3). The procedural skills are developed after students have been introduced to a concept or clinical problem in a 15 to 20 minute preliminary didactic session which allows them to contextualize their skill-learning in a broader framework. Additionally, student questions are noted during the simulation session which form the basis of a follow-up question and answer session. The student questions lead to rich discussions on the rationale and indications for procedures, along with risks, benefits and alternatives. This also exposes students to potential areas of research and inquiry given that there are not always answers to questions that arise.

Evaluation Plan: We will utilize two separate tools for evaluation of the course's impact: weekly session feedback forms and pre- and post-course surveys. The weekly feedback forms will assess student satisfaction with the most recent course session, whether they felt the learning goals were achieved, and possible areas of improvement. The pre- and post-course surveys will evaluate the course's effect on student interest towards pursuing residency in ObGyn or other surgical specialties and their confidence with performing ObGyn procedures in clerkship utilizing a 5-point Likert scale (1). Furthermore, we hypothesize that engagement in simulation has the potential to remind students why they want to become doctors and prevent early burnout, as simulation allows students to visualize their potential in a safe and protected environment. The pre- and post-surveys will also include questions to evaluate the course's impact on these aspects of improving student wellness (2).

Potential Impact: Early preclinical exposure to surgical specialty skills practice will promote confidence and self-efficacy in clinical settings, reduce early burnout by providing meaning, and promote career exploration in preclinical MD students.

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Integrating the EHR into the Preclinical Curriculum

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Idea: An interactive electronic health record (EHR) simulation designed to help medical students develop EHR use skills prior to clinical rotations.

Need: EHRs have rapidly integrated into clinical practice, and medical students are expected to use the EHR competently from the beginning of their clinical rotations. A nationwide survey of all medical students taking USMLE Step 2 CK showed that students access EHRs in 93% of clerkships and enter information in 72%. The Centers for Medicare & Medicaid Services revised policy to allow teaching physicians to verify rather than re-document certain EHR components written by medical students, allowing students to aid their teams and preceptors with documentation. Students must develop effective EHR skills prior to entering clinical rotations and standard didactic sessions may be insufficient. Optimizing student workflow is especially important to preserve student time for patient interactions and other educational activities. We designed an EHR training that integrates into existing small group problem-based-learning case studies, allowing students to practice EHR use as part of standard curriculum.

Methods: The intervention focuses on the 134 second-year medical students at the University of California San Diego School of Medicine and will be piloted during two problem-based learning small groups over one month, with the potential to expand to weekly sessions. Intervention includes several components: 1) a custom-built patient chart in the non-production EHR that includes all patient information needed for the case study. Students will be required to locate the needed information within the EHR as part of the case discussion and medical decision making; 2) Brief guides created to demonstrate specific objectives, such as how to locate lab results. The level of prior EHR experience of the students in each small group will vary, so these resources will aid all students with basic skills. These guides will also be available after the session for reference when in clinics and wards; 3) Students will practice writing notes within the EHR that demonstrate concise, clear communication of their data review and medical decision making; 4) Facilitators of each small group will monitor the students' ability to navigate the EHR during sessions, and evaluate student-written notes for content and clarity. Facilitators with EHR experience will also be encouraged to share their knowledge with students during the small group sessions.

Evaluation Plan: Students will complete pre- and post-session surveys to evaluate their ability to meet predefined EHR use objectives, write concise and effective notes in the EHR using the information gathered, and use the EHR as part of their workflow. In addition, students will complete a survey one month after beginning clinical clerkships to evaluate their preparedness for clinical EHR use. Written and verbal feedback from students and facilitators will be solicited during direct observation of sessions and through focus groups to identify strengths and areas of improvement for the training.

Potential Impact: Integration of this intervention will equip medical students to develop effective EHR skills and workflow, enhancing their ability to learn and contribute to their teams in clinical settings.

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Simulation activities for promoting metacognition in general surgery residents

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Idea: Using simulation scenarios with focused briefing and debriefing to promote metacognition in general surgery residents.

Need: Metacognition plays an important role in development of the required ACGME competency of practice-based learning and improvement. Although the importance of metacognition is well recognized, there are limited studies measuring or enhancing these skills at the residency level [1]. A validated tool for measuring metacognition was developed by Schraw in 1994 and can be utilized with any program to enhance these skills [2]. One key in developing metacognition is cognitive apprenticeship. We believe that simulation can be designed to incorporate elements of a cognitive apprenticeship: content knowledge, model the process, importance of sequencing and sociology of learning [3]. We hypothesize that trauma simulations with group briefing and debriefing supplemented with individual feedback, can foster metacognition in surgical residents.

Methods: A prospective single group pretest-posttest design will be conducted. During the first rotation of the year, all 60 general surgery residents (PGY 1-4) will be enrolled and divided into groups. Each group will consist of PGY 1-4 residents. The intervention will consist of 3 simulation sessions over six months. With 60 residents each simulation will need to be repeated 10-12 times, thus a new one every two months. Each of the three sesssion will include the following: a) 10 minute briefing to establish the parameters of the simulation and allow residents to “think” about the knowledge required; b) 20-minute simulation; and c) 30-minute debriefing of the scenario with time for individuals to record their gaps in knoweldge, problem solving (thought processes) or skills. The focus of the debriefing is to help learners identify what they know and don’t know. Instructors will also offer strategies for learners to utilize to fill the gaps. This is reflection on action. In addtion to the group debriefing, Individual feedback will be provided after session by instructor. The topics for the three sessions will be: 1) emergency trauma case: 2) multiple surgical consultations; and 3) surgical case in operating room. Learners will have a personal planning form to use with slots for each of three plans and the actions taken to fill gaps each resident identified during the simulations. Metacognition will be tested after simulation using MAI. Two months later, the second 1hour simulation will be conducted in the theme of multiple surgical consultations. All residents will do the metacognition test again after simulation. The third simulation will be performed again in the next 2 months in operating room problems theme with focusing on briefing and debriefing.

Evaluation Plan: The evaluation of the project will include multiple tools. 1) The quality of the simulation sessions (briefing, simulation activity, debriefing, individual feedback, and use of the planning form) will be assessed with a standard session and course evaluation form. 2) Learner metacognition will be assessed pre and post intervention using the Metacognitive Awareness Inventory (MAI). 3) Review of the planning forms (conducted 3 months after the final simulation session) will be used to assess the self-regulation portion of metacogntion, percent of “plans” that were followed up with action.

Potential Impact: Simulation scenarios with focused briefing and debriefing may be an effective option for enhance metacognition in the field of surgery, and could provide a model for other specialties or health profession that regularly utilize simulation.

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Implementing OSTEs as a Faculty Development Motivator

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Idea: Implement OSTEs, assess its effectiveness, and have faculty self-identify and implement areas for self-improvement.

Need: The ACGME requires all faculty to participate in faculty development annually [1]. The use of standardized patients and Objective Structured Clinical Examinations (OSCEs) are common in medical education [2]. However, the use of Objective Structured Teaching Experiences (OSTEs), though documented 25 years ago, is still not a commonly used teaching tool [3]. Physician faculty have often been reluctant to being observed or recorded during real patient encounters which they precept for a myriad of reasons, including being "graded," perceived insufficient time during actual clinic sessions, obtaining consent from patients, and the legal consideration of whether their encounter is discoverable. Creating an OSTE overcomes these barriers and allows for precepting challenges to be encountered by all faculty. One-on-one feedback from the faculty development experts allows formative feedback without being graded. This "cool idea" is to create and implement OSTEs, and to take it a step further. After debriefing the OSTE, faculty complete a questionnaire about their experience. They then pick one area they wish to improve over the next 3 months, and they incorporate a change to promote this improvement. After 3 months they present this change to the other faculty at a faculty meeting. As noted, OSTE's are not widely used, and there is no literature showing that faculty have taken the step to implement what they have learned.

Methods: Experts in faculty development will create 3 OSTE scenarios for Family Medicine faculty to encounter. These include the resident who cannot present the patient in a concise yet comprehensive way, the resident who seems more interested in finishing the patient encounter than caring for the patient, and the resident who has excellent medical knowledge and challenges the attending with it. Residents will be taught how to play the role of the standardized resident. Each encounter is limited to 7 minutes. The criteria to review the role play are on a check list that includes (1) assessment of listening by the preceptor, (2) guidance by the preceptor, (3) teaching pearls, (4) suggestions for further reading and instruction, (5) use of both positive and negative immediate feedback at the precepting encounter, (6) controlling the learning environment, (7) allowing for resident self-assessment, and (8) overall professionalism displayed. Debriefing for each encounter, moderated by faculty development experts, will be approximately 15 minutes, reviewing strengths and weaknesses the preceptor exhibits. Each faculty member will choose one of the eight areas on the check list for self-improvement, which will involve assigned and self-directed reading, and implementation of a self-designed plan to foster this change. At a faculty meeting 3 months later, each faculty member will describe the change they made in teaching and what they learned over the past 3 months.

Evaluation Plan: 1) Creation of 3 standardized resident OSTE cases. 2) Identification of at least 8 articles or reading resources, one for each area on the standardized resident checklist. 3) Training of residents as standardized residents. 4) Implementation of the OSTE. 5) Feedback form from the attending after the OSTE, evaluating the OSTE process at the attending level, assessing the types of cases chosen for the OSCE, the items used on the check list, and assessing the debriefing session. 6) Faculty identify one area for intervention and change to implement over the next 3 months. 7) Faculty presentation of the intervention to the rest of the faculty at a faculty meeting 3 months post OSTE. 8) Feedback form from the attending about the OSTE experience as a faculty development tool (3 months post OSTE).

Potential Impact: Using a standardized resident approach to document change in faculty behavior has yet to be developed and studied. If standardized residents and OSTE's for faculty are noted to be successful faculty development and driving change, then OSTEs can be used in all fields of residency training.

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Senior Residents as Standardized Patients: Creating the Scenarios and Playing the Role

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Idea: Senior Family Medicine create standardized patient encounters for junior residents, with senior residents serving as the standardized patient.

Need: Initial assessments of PGY 1s are often done via Objective Structural Clinical Exams (OSCEs) utilizing standardized patients and simulations. Standardized patients have been shown to be more effective than mannequins in teaching certain skills [1]. However, the availability, cost, and accessibility of OSCEs with standardized patients may not always be possible. OSCEs have been shown to be useful in different areas, including educating on defined topics in medicine, assessing communication, interpersonal skills, and professionalism, and observing for cultural competence [2]. Additionally, it is well known that learning through teaching is an effective method of gaining skills. However, standardization of checklists in simulated patient experiences is not consistent [3]. To address, we are creating a program, using faculty as moderators, to train senior residents (PGY 3s) to develop standardized patient scenarios. The PGY 3s create the scenarios and the checklists, and also serve as the standardized patient, assessing the PGY 1 residents during orientation. The goal is to produce a program that is inexpensive and accessible to all programs. We will be able to identify PGY 1 residents' strengths and weaknesses, as well as teach PGY 3 residents teaching and assessment skills, expectations of communication and professionalism, and knowledge about cultural competency, while learning about curriculum design using a standardized patient.

Methods: PGY 3s partake in two 2-hour workshops on being a simulated patient and OSCE design. The OSCE design includes 4 forms: 1) a door chart, information the PGY 1 reads before entering the room; 2) information for the standardized patient, addressing how to respond to questions; 3) a lab result sheet, with results of tests requested by the PGY 1 resident; and 4) a check list, scoring the PGY1's history, physical, requested labs, assessment and plan. Additionally, during the workshop, PGY 3s are taught how to be standardized patients and stay in that role. The second part of the initial workshop is to teach PGY 3s how to provide effective feedback during the debriefing. The second faculty guided workshop is the creation of the 4 OSCE forms by the PGY 3s. The PGY 3s must identify the required components to be addressed by the PGY 1 resident for each scenario. Three scenarios (communication and professionalism, cultural competency, and heart failure) will be created. OSCEs will occur in our clinic. All PGY 1's encounter all 3 scenarios. After the OSCE the faculty debrief with the PGY 1s and the PGY 3s. The debriefing includes a PGY 1 self-assessment, a review of the score sheet (completed by the PGY 3 resident), a review of the video of the encounter (also to be streamed live ("face timed") to the faculty outside the room), and feedback how the resident (as the patient) felt during the encounter. Each OSCE scenario, including debriefing, takes 40-60 minutes, totaling 2-3 hours.

Evaluation Plan: All PGY 1s see standardized patients and all PGY 3s play a standardized patient. Additionally, several evaluation forms are used. 1) The PGY 1s review their satisfaction with standardized patients encounters, and self-evaluates their communication skills, cultural competency, and medical knowledge, using KEECC-A and other evaluation tools. It also assesses the PGY 1's perception of the PGY 3 as a standardized patient. 2) The PGY 3 feedback form examines change of expectations when assessing PGY 1's history and data gathering. It also assesses creating check lists for standardized patients as a way to improve their own (PGY 3's) medical knowledge, cultural competency and communication skills. Thirdly it assesses the goal of the first workshop in preparing them to become a standardized patient. 3) The faculty mentor completes an assessment tool to assess their satisfaction with the training workshops, the OSCE, and the impact the experience had on them as a faculty member.

Potential Impact: The effectiveness of senior residents as standardized patients is being explored in terms of effectiveness in teaching junior residents and in the learning incurred by senior residents. This simple, inexpensive activity provides different levels of standardized patient experiences to all residents.

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Patient Priorities First: Teaching Reproductive Justice to Pediatric Residents

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Idea: Improve pediatrics residents' contraception counseling skills by introducing the reproductive justice framework through case-based scenarios.

Need: Pediatricians care for adolescents and young adults, many of whom are sexually active.1 Studies demonstrate inferior contraceptive knowledge among pediatric residents', compared to ob/gyn peers, and find a correlation between receipt of formal training and knowledge scores. This highlights a potential impact for standardized curricula.2 In academic institutions, residents care for disproportionately underserved communities, many of whom have experienced historical healthcare disparities. The nationally-recognized framework of reproductive justice acknowledges this reality and prioritizes patient autonomy in contraception counseling which has been identified as an important component of patient-centered care. By integrating reproductive justice in the adolescent rotation, all residents will be able to practice the skills during the case-based sessions and then to immediately incorporate the important approaches that this framework offers into their practice.

Methods: The curriculum will be part of the month-long required adolescent medicine rotation. Approximately 35 second- and third-year residents will participate between August 2019 to August 2020. No randomization or stratification of participants will occur. Participants will be provided with online contraception counseling reference sources at the beginning of the rotation. The classroom session comprises an introduction to the framework of reproductive justice followed by interactive case-based discussion to facilitate residents' application of principles to common clinical scenarios. Residents will be provided with strategies and tools for counseling including conversation scripts developed by reproductive justice experts with patient-centered language. There will be another case-based discussion later in the rotation for participants to further practice these skills. The curriculum and the role playing scenarios are adapted from established curricula for teaching reproductive justice to trainees and providers developed by experts in the field. The sessions will be presented by adolescent medicine providers and/or the principal investigator.

Evaluation Plan: The sessions will be evaluated according to Kirkpatrick's framework and will include the domains of reactions, learning and behavior. We will use Likert-based pre- and post-intervention surveys to assess changes in knowledge, attitudes, and reported skills, as well as an observed standardized clinical encounter to assess practical skills, with a nationally-utilized checklist for assessing competency in patient-centered contraception counseling in residents. The post-intervention surveys will have questions assessing perceptions of the curriculum, including enjoyment, novelty, and utility of the content. The survey will also solicit suggestions for curricular improvement in future iterations.

Potential Impact: Through this curriculum, pediatric trainees will be cognizant of historical disparities and oriented towards justice in their contraception counseling; patients will experience reproductive healthcare that affirms their priorities and their autonomy.

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Can Targeted Coaching Improve Emergency Medicine Residents' Skill and Satisfaction with the EMR?

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Problem Statement: Emergency medicine residents are frustrated with their ability to use the electronic health record.

Rationale: With physician burnout and attrition from clinical practice gaining increasing attention at a national level, concrete solutions are needed to address physician stressors. One stressor which physicians often cite as a cause of burnout is dissatisfaction with the electronic medical record (EMR). Emergency medicine residents at our institution often stay late by necessity to finish charting, contributing to longer work hours and frustration with the EMR. Historically, any additional EMR training after the initial sessions intern year has been done haphazardly while on shift; there has been no further structured curriculum for residents. We have implemented a structured EMR coaching session for rising second year residents, with EMR tips and tricks gathered from senior residents and attendings.

Methods: This study aimed to measure the effect of a single 60-minute session of targeted EMR coaching for second year emergency medicine residents on their satisfaction with their ability to use the EMR. The coaching session was conducted by senior residents and faculty members and was focused on the creation of dot-phrases, note templates, and order sets. Satisfaction was measured using surveys administered immediately prior to the course and 1 month following the course. Paired T-tests were performed in Microsoft Excel to compare respondents' answers before and after the course. We will also be measuring resident's EMR usage efficiency, however, this data has not yet been collected. Efficiency will be measured using quantitative data obtained from Cerner advance to determine time spent on documentation per patient, and will be collected on the three-month period prior to and following the course.

Results: After the course, respondents' answers to the question "how skilled do you feel you are at using the EMR?" increased significantly (Mean increase = 0.65, SD = 1.04, N=17), $t(16) = -2.56$, $P = 0.02$), which supports the hypothesis that this educational initiative would increase self-perceived EMR skill. Respondents' answers to the question "how satisfied do you feel with your EMR skills?" also increased significantly, (Mean increase = 0.79, SD = 1.26, N = 17), $t(16) = -2.59$, two-tailed P value = 0.02. After the course, there was a significant decrease in the degree to which respondents felt their order entry skills could improve (Mean decrease = 0.71, SD = 1.36, N = 17, $t(16) = 2.14$, $P = 0.047$), but no significant difference in the degree to which they felt their note writing skills (Mean decrease = 0.47, SD = 1.17, N = 17, $t(16) = 1.65$, $P = 0.12$) or data viewing skills (Mean decrease = 0.38, SD = 1.08, N=17, $t(16) = 1.46$, $P = 0.16$) could improve. As part of the post course surveys, participants were asked to answer questions evaluating the session. 100% of participants answered "yes" to the question "do you think we should continue to offer the coaching session for the rising PGY2s?". When asked "How helpful do you feel the coaching session was?" 16/17 of participants answered "5" on a scale of 0 to 5 (0= not helpful at all, 5 = very helpful), 1 participant answered "4".

Potential Impact: Our EMR coaching session successfully improved residents' EMR satisfaction and self-perceived skills. Implementation of a similar curriculum across other specialties and hospitals could have far reaching positive effects on physicians overall job satisfaction, well being, and physician retention.

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Improving Resident Confidence with a Cost-Effective External Jugular Vein Cannulation Model

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Problem Statement: Emergency medicine residents have low confidence in placing external jugular IVs, a relatively quick and simple procedure.

Rationale: Emergency medicine residents must become proficient with many procedural skills during their training. External jugular (EJ) vein cannulation as rapid way of gaining difficult peripheral IV access has long been practiced, however, since the advent of ultrasound (US), many residents are no longer practicing this skill. Our objective was to assess the baseline confidence of emergency medicine residents in preforming external jugular venous access and to see if attending a simple educational session, in addition to practicing on a cost-effective EJ specific model can significantly increase resident confidence.

Methods: Emergency medicine residents at Barnes Jewish Hospital attended an educational session with a 5-minute instructional video about EJ IV placement and then participated in a practical simulation session on a unique EJ model that was built from widely available cheap materials. Pre- and post-educational session surveys were completed by the residents, assessed by a 6-point Likert scale.

Results: 18 residents (6 PGY-1s, 7 PGY-2s and 5 PGY-3s) participated over 1 clinical skills day. Overall, most residents had placed zero or only 1 previous EJ IV (58% had placed ≤1). Compared to other emergent IV access techniques including ultrasound-guided peripheral IVs and intraosseous access, there was a lower confidence in EJ placement (4.72 and 4.11 respectively vs 2.22 for EJ IVs on a 6 point Likert scale; p value 0.0006). Both the number of previous EJs placed and PGY-year had a linear effect on confidence (R squared 0.359 and 0.218, respectively). After the education and simulation session, overall confidence, as well as confidence in speed, anatomy, indications, troubleshooting and procedural skill, statistically improved (p values 0.000462-0.02). All but one resident thought that EJ IVs had the potential to be the fastest emergent IV access after the session.

Potential Impact: With a short educational/simulation session on EJ IV placement, emergency medicine residents can significantly increase their confidence in the procedure.

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Biostatistics Curriculum Transformation via Active Learning to Enhance Skills Among Clinical Fellows

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Idea: A novel, applied biostatistics curriculum rooted in active learning,1 to establish foundational biostatistics skills among 1st year clinical fellows.

Need: The National Clinician Scholar Program (NCSP) aims to train clinicians as change agents driving policy-relevant research and partnerships to improve health and health care. Scholars are expected to cultivate health equity, eliminate health disparities, invent new models of care, and achieve higher quality health care at lower cost. Scholars participate in a robust, inter-professional curriculum to acquire and hone a diverse set of skills in qualitative and quantitative research methods, with biostatistics contributing to the foundation of this curriculum. However, biostatistics has been historically viewed as one of the more difficult and disliked components of research methods curricula. Among fellows, existing skills are poor despite the fact that all scholars have had prior exposure to biostatistics courses. In a routine course evaluation, current trainees rated their pre-course knowledge of biostatistics when reading peer reviewed journal articles as 4.5 out of 10 (50% rated themselves <5.0) and their pre-course ability to analyze data using statistical programs as 3.3 out of 10 (69% rated themselves <5.0). Consequently, we sought to redesign our core biostatistics course in order to: 1) improve fellows' competencies in performing and interpreting statistics pertinent to a variety of empirical healthcare publications; and 2) develop new, applied content delivered via active learning to heighten participant engagement and retention of content.

Methods: A logic model [2] was developed to inform the instructional design and evaluation of this course. A convenience sample of 17 fellows participated in a 12-week intensive program, which included weekly didactics, interactive laboratories, and practice-based assessments. A modified flipped classroom approach [3] and peer instruction strategies were selected as active learning modalities during in-class sessions. Prior to lectures, students were expected to read short chapters explaining the mechanisms of statistical concepts/tests, with application to authentic research questions during in-class sessions, paired with discussion of interpretation and potential limitations of each test. During labs, students learned statistical software programming to execute previously discussed tests, with students testing their mastery of test interpretation and test assumptions via peer instruction. Assessment problems had several potential solutions and students were evaluated on their ability to discuss/justify their analytic decisions, as well as proper test execution. Innovations to the course structure included: 1) use of one real, large dataset for all examples in lecture, labs, and homework to illustrate how analyses are iterative and cumulative; 2) alignment with a co-occurring journal club and 'Foundations of HSR' course to further reinforce concepts; and 3) partnering with faculty who assisted fellows in obtaining data and applying learned skills to their individualized final project.

Evaluation Plan: Fellows provided three evaluations of the course and their progress on key competencies at weeks 1, 7, and 12, with questions informed by our logic model. At the mid-course evaluation, 75% of students said they were likely/very likely to independently apply what they've learned when reading the literature and 64% similarly said they could independently apply their skills for analyzing data. Students reported significant ($p<0.01$) improvement in their ability to understand statistics in peer-reviewed articles (Mean score out of 10 Pre: 4.5±2.0 vs Post: 7.5±1.0) and their ability to analyze data with statistical software (Mean score out of 10 Pre: 3.1±1.9 vs Post: 6.1±0.8); 100% of students rated these skills ≥5 post-course. Qualitative comments indicated that students felt the applied content assisted their learning. We plan to evaluate the number of fellows who complete a quantitative data project by the end of their two-year fellowship, compared to historical controls.

Potential Impact: We demonstrated that rigorously planned, application-based active learning guided by a logic model can successfully improve biostatistics skills among clinicians. Our early evaluation of this new model highlights successes and opportunities that will inform subsequent course modifications.

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Effect of MD-DO Collaboration on Stereotypes, Interprofessional Readiness, and Patient Experience

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Idea: Stereotypes exist between MD and DO students. Does early interprofessional clinical collaboration improve these perceptions and benefit the patient?

Need: Medical schools represent important specialized venues, teaching students, among other things about the manner in which they are to communicate with other members of the field, the public, and clients. Allopathic (MD) and Osteopathic (DO) medical schools vary in their approaches to teaching students which may lead to differences in how they conceptualize and talk about problems, events, activities, and people. Despite a lack of concrete evidence, it is widely thought that interprofessional collaboration improves patient outcomes by enhancing communication and increasing accessibility to services. Numerous studies evaluating collaborative practice/education have been published, but these studies have largely overlooked collaboration between MD and DO physicians. As interactions between MD and DO physicians becomes increasingly commonplace, there is increased need to understand how these interactions influence clinical practice and healthcare provider perceptions. The following study will attempt to answer two principle questions: 1) whether interpersonal collaboration between MD and DO students in early medical school education at a student-run free clinic positively affects interprofessional stereotypes/readiness; and 2) whether interprofessional collaboration between MD and DO students positively impacts patient-perceived communication.

Methods: All study activities will be conducted at An Lanh Free Medical Clinic in Garden Grove, CA. First and second year medical students from the University of California, Irvine (MD) and Western University (DO) will be block randomized by a designated board member into the following 3 groups: MD/MD, MD/DO, DO/DO. The design of n=40 pairs in each combination, totaling n=120 pairs of medical students, achieves 80% power to detect the differences among the means versus the alternative of equal means. All surveys will be completed using RedCAP and disseminated to participants on tablets. For the two primary outcomes, since there are two students' response per pair, multivariable linear mixed effect models with pair-level random effect will be used to assess the difference in SSRQ and RIPLS scores among difference combinations (MD/DO, MD/MD, DO/DO). The analysis will also be adjusted for certain covariates such as students' grade, intended specialty, etc. For the secondary aim, multivariable linear mixed effect model will be used to assess the association between SSRQ and RIPLS scores from the students and patient experience score. The outcome will be the patient experience scores (multiple scores per pair), while the key explanatory variable will be average SSRQ or RIPLS score from the two students in the pair.

Evaluation Plan: The first question will be assessed based on two validated surveys - Student Stereotypes Rating Questionnaire (SSRQ), a 9-item questionnaire designed to elicit stereotypes between various healthcare professions, and Readiness for Interprofessional Learning (RIPLS) Questionnaire, a 22-item questionnaire that measures attitudes toward interprofessional education. Three qualitative questions will also be distributed to each medical student. We hypothesize that MD/DO pairs will score higher in interprofessional readiness and have more positive stereotypes than students paired MD/MD or DO/DO. The second question will be assessed by the subsection, 'Doctors Who Communicate Well', of the Consumer Assessment of Health Plans Study (CAHPS) survey, a 4-item questionnaire that assesses doctor communication. We hypothesize that MD/DO student groups will communicate better with patients than those paired MD/MD or DO/DO.

Potential Impact: The results of this study will provide evidence-based recommendations on the importance of early interprofessional interaction on clinical practice and healthcare provider perceptions between MD and DO physicians.

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Interprofessional Collaborative Education Between Graduate Schools of Pharmacy and Chinese Medicine

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Idea: PharmD students and TCM Doctoral students will develop interprofessional skills across the professions through collaborative educational experiences.

Need: Traditional Chinese medicine (TCM), which utilizes manual and Chinese herbal medicinal therapies, is becoming more prevalent in western society. The increasing integration between eastern and western medicine provides the need for additional educational efforts to increase the number of pharmacists and TCM practitioners that can provide appropriate care for patients who have chosen to seek out multiple methods of disease state management. Patients are frequently taking multiple medications, supplements, and herbal remedies; therefore, there is a need to improve patient safety around potential herb-drug interactions within both professions. While there is graduate education in both pharmacy and TCM, there is very little overlap or interaction between the two fields of study. The development of a collaborative teaching and learning course between health professionals in a PharmD track curriculum and those in TCM track curriculum will help both groups gain a more thorough knowledge of each profession, with the goal that participants will feel comfortable understanding and identifying common uses of both traditional and modern medications to improve patient-centered outcomes and safety, and develop interprofessional relationships for a referral network.

Methods: PharmD and TCM doctoral students will develop an elective curriculum course for both professional schools that integrates common medicinal herbs and theory with modern pharmacotherapy, meeting the unique didactic needs at each school. PharmD students will develop course objectives, syllabus and framework for the course. Supporting faculty at both professional schools with develop content to be taught for the class. This will culminate with students from both schools coming together for the clinical-laboratory component of the course. The course will be conducted over a 15 week period (one semester) which will be divided into modules that cover common conditions presented in outpatient setting. For every module two hours will be lecture based where students will learn foundational information on each disease state in their respective teaching environments and then come together for three hours of collaborative “flipped classroom” interaction between both schools where students discuss patient cases and approaches to treatment from the perspective of each profession.

Evaluation Plan: Conduct a survey of both The University of Texas College of Pharmacy (UTCOP) and AOMA Graduate School of Integrative Medicine (AOMA) students prior to the start of the course as well as at the completion of the course to determine self-perceived confidence and competence in TCM herbal therapy and modern pharmacotherapy. Learning will be evaluated through course examinations as well as patient case presentations. Program participants will be invited to evaluate the course and provide feedback on the effectiveness of the course content.

Potential Impact: This course will develop interprofessional growth and collaboration between clinical pharmacists and TCM providers for the overall health and safety benefit of patients. Long term impact will be felt as more practitioners are comfortable collaborating and learning from each other.

Introduction to Mock Triage: The Do's and Don'ts of Managing an Obstetrical Triage Unit

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Idea: An interprofessional curriculum was designed to improve communication skills between learners and professionals and to ensure patient safety.

Need: The obstetrical(OB) triage volume typically exceeds the overall birth volume of a hospital by 20-50% [1]. According to the Emergency Medical Treatment and Labor Act (EMTALA), an initial medical screening is required to determine if a true medical emergency exists and for pregnant women, that includes an evaluation of the woman and the fetus [2]. The obstetrical triage unit (OTU) requires close interaction between the health care provider and triage personnel, which is clear, timely, sincere, and has a complete exchange of clinical information (3). Since ob/gyn residents are often the frontline personnel in the OTU, their ability to identify common obstetrical triage visits, including acute critical conditions, are paramount to patient safety. Early obgyn resident mastery of the evaluation of patients in the OTU is critical, which includes the initial screening of overall patient well-being and history; an assessment of the mother's well-being, including patient history (presenting symptoms), current risk factors, and pregnancy course (prenatal chart); an evaluation of fetal status, depending on the gestational age; and an assessment of active term or preterm labor, pelvic adequacy, and fetal presentation. This model for a mock triage drill can assess gaps in obgyn resident, midwifery and nursing students' comfort with the above evaluation in a simulation format and determine educational modalities for improvement if such gaps are identified.

Methods: This intervention will focus on 17 ob/gyn residents in our program and take place over one year at one of the clinical sites that residents have obstetrical rotations in three-month intervals in the 2019-2020 academic year. The intervention will include the following: 1) didactic sessions during resident educational sessions once over three-month periods that the drills will be executed. Education on OTU algorithms currently available in the literature will be reviewed prior to each mock triage drill; 2) direct observation by faculty members, who are obstetricians or midwives; 3) pre- and post-assessment evaluations with debriefing sessions during each mock trial drill for immediate feedback by obgyn residents and faculty members; 4) written evaluations of residents by faculty members; 5) nursing staff feedback during debriefing sessions; 6) self-assessment by residents on their performance during the mock triage sessions; (7) priority evaluation will be conducted during the mock triage drills, including an initial assessment of priority level for evaluation and triage algorithms to assess and assign the priority of obstetrical patients; (8) involvement of medical students rotating in obgyn rotations as team members in the OTU.

Evaluation Plan: Every three-month didactic session will be evaluated by pre-assessment surveys to residents and faculty members about the evidence based mock triage algorithms. Post-assessment evaluations will be conducted at the end of the mock triage sessions. Debriefing sessions will be conducted immediately after the mock triage sessions after completion of the post-assessment surveys for direct feedback by faculty members of resident performance and improvement skills as identified. Overall, improvement in interprofessional and intra-professional communication skills, immediate identification of acute clinical scenarios and appropriate and immediate resident involvement of attending staff based on patient acuity will be assessed.

Potential Impact: Implementation of these changes will illustrate best practices and challenges for other obgyn residency programs on resident education in OTU evaluation and patient safety.

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A Systematic Approach to Chest Radiography Interpretation for Medical Students

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Idea: A small group session designed to help medical students develop and improve their systematic approach to chest radiograph interpretation.

Need: Chest radiography is a common, essential diagnostic tool utilized across a spectrum of healthcare venues, ranging from acute settings such as the emergency department to outpatient clinics. It is frequently the first line imaging evaluation for patients with a variety of clinical conditions, given its nature as a rapid and straightforward procedure. Chest radiography also offers a relatively inexpensive method for surveillance and follow-up of patients, as can occur in critical care settings. Given its widespread utilization, it is essential for healthcare professionals across all levels to attain competency and proficiency in analysis and interpretation of chest radiographs. However, education in chest radiography interpretation is not as widely emphasized as one might expect, with only 29% of medical schools incorporating a required clerkship in diagnostic radiology in their curriculum [1]. Moreover, chest radiography is considered one of the more difficult imaging studies to interpret [2]. This small group learning module aims to assist learners in developing a systemic approach to chest radiography interpretation with the goal of serving as a building block to attaining proficiency in analyzing this important diagnostic test.

Methods: The small group session is designed to be completed in the classroom setting over a 2-hour period with an audience of 5-10 medical students. The key components are as follows: 1) Pretest administered to assess students' baseline knowledge of chest radiography interpretation 2) Group facilitator presents a series of introductory slides outlining key tools and systematic approach to image interpretation 3) Series of chest radiography cases presented in an interactive format where students apply the newly acquired systematic approach and identify key imaging findings 4) Secondary questions posed by the facilitator challenge the students to incorporate their non-imaging medical knowledge in proposing differential diagnoses 5) Post-test administered following the session reviews the concepts covered in the module Presenter notes are included for the facilitator to guide the discussion and highlight the key teaching points from each case. The post-test results are reviewed at the conclusion of the session and the forum is opened for student questions and feedback.

Evaluation Plan: The success of the learning module will be assessed by three metrics. 1) Comparison of post-test performance compared to pre-test performance results (percentage of questions answered correctly) 2) Survey immediately following the module assessing learner satisfaction with the format of the session, length of the session, quality of imaging cases, and level of student engagement 3) Long term survey follow-up at 6 months assessing students' baseline knowledge of chest radiography interpretation prior to their next scheduled formal imaging instruction.

Potential Impact: Implementation of this module in the medical education curriculum will provide a more structured format for teaching the basics of chest radiograph interpretation through a systematic approach, with the goal of enhancing student proficiency in utilization of this important diagnostic tool.

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Exposing Medical Students to Pathology:
Speed Dating Style Sessions to Improve Interest in the Field

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Idea: Expose medical students in the preclinical years to the many roles of the pathologist in clinical care

Need: Medical students receive minimal exposure to the clinical practice of pathology as a medical specialty, as they encounter pathologists primarily as instructors or lecturers in the preclinical years. These encounters are inadequate to convey what it is that a pathologist does, aside from teaching. This failure to provide any substantial understanding of pathology as a career is likely a contributing factor to the decreasing numbers of students pursuing pathology residencies. We propose that small group sessions early in medical school, even if lasting only a few hours could significantly improve students' understanding and interest in both anatomical and clinical pathology.

Methods: We piloted this activity in the spring of 2019 with a small group of 12 students. Four second-year medical students at a time participated in a two-hour session. For the first hour, all four students followed a complex leukemia case through the different areas of the laboratory, reviewing the peripheral smear and associated molecular findings with a hematopathologist, the cultures with a microbiologist, and the transfusion medicine implications with the director of the blood bank. The students were then divided into groups of two, with two students introduced to the frozen section room to learn about intraoperative evaluation and to perform and stain their own sections from autopsy material we had set aside for this purpose, with resident and/or faculty supervision. The other two were introduced to the grossing bench and given uncomplicated specimens to describe and section, also with resident and/or faculty supervision. Finally, if an autopsy was performed that day, all four students would reconvene and briefly observe the procedure or review the organs with the resident on the autopsy service. This rapid exposure to different areas of pathology was dubbed "speed dating" by our services.

Evaluation Plan: In future sessions, to begin in fall 2019, we plan to add an IRB-approved questionnaire for the medical students to fill out both before and after their two-hour experience. The questionnaire will include the student's basic understanding of what an anatomical and clinical pathologist does, how they view the pathologists role in clinical care, and how likely it would be for them to participate in a pathology elective rotation at a later date. These responses (including open comments) will be quantified and compiled to assess whether the rapid sessions changed their perceptions.

Potential Impact: We suggest that this activity might improve understanding and communication with clinicians in the future, increase the numbers of applications to pathology post-sophomore fellowships, and to increase applications to pathology residencies in the future.

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Peer-Assisted Learning Live On Air - Cognitive and Social Congruence in Online Student Tutorial

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Idea: Investigation of cognitive and social congruence as key elements in peer-assisted learning in online and face-to-face student tutorial.

Need: Cognitive and social congruence present key elements for an effective peer-assisted learning between student tutor and students. They foster a relaxed and pleasant learning environment [2]. These two concepts are influenced by the interaction of student tutors with their students: Students consider their student tutors empathic and supportive when they are perceived as cognitively and socially congruent as the student tutors share their learning experiences and give advice to the students. Further, students are encouraged by cognitively and socially congruent student tutors to actively participate in class, ask questions and feel motivated [3]. Cognitive congruence is shown when students and student tutors share a common and similar knowledgebase and language [3]. Student tutors show social congruence by being interested in the students' problems and demands [3]. Simultaneously, many student tutorials take place online as online tutorials have a lot of advantages like easy accessibility and flexibility. Further, online tutorials are well accepted by students [2]. Thus, in a comparative study we aim to investigate whether cognitive and social congruence as key elements for peer-assisted learning may differ between an online and face-to-face student tutorial. Further, we test learning progress/competence gain in students who participated in the study.

Methods: The study takes place at the Skills lab of the Medical Faculty Tuebingen. First year medical students are taught in taking the review of systems (ROS) as part of the medical history by student tutors. The teaching of the ROS course takes place online or face-to-face. The teaching that is explained by student tutors to the students (5 students per group) consists of the following topics: 1) how to take the ROS reported by the patient 2) how to communicate and interact empathically with the patients (welcome patient, ask for his/her name, say name and function). In the face-to-face setting the student tutor is in the same room with the students. In the online setting the student tutor is joined by using a video chat. In both settings the students conduct role-plays which are examined by the student tutor and he or she gives feedback to them. Students rate the cognitive and social congruence as well as the teaching. The learning success is rated by checklists by the student tutors and a short test at the end of each tutorial, which will be repeated after two weeks as follow-up of theoretical knowledge gain.

Evaluation Plan: This investigation presents a comparative study of face-to-face student tutorial vs. online student tutorials. First year medical students are randomly assigned to the face-to-face or online tutorial. Each student tutorial lasts one hour. The student tutors are experts for taking medical history. They receive a manual of the teaching and are instructed by the responsible investigators of study. We aim to investigate if the students rated the student tutors as cognitively and socially congruent in both conditions (online vs. face-to-face). Cognitive and social congruence is measured by a self-developed and validated questionnaire based on Schmidt & Moust (1995). Further, we want to compare the learning success of the students when taking ROS. The learning success is rated by checklists (based on the Symptom Checklist 90) by the student tutors and by a short test developed by us in order to examine the students' gathered knowledge. This test will be repeated after two weeks.

Potential Impact: This investigation might show advantages, disadvantages and effectiveness of online teaching vs. a traditional face-to-face teaching in peer-assisted learning in order to improve cognitive and social congruence in online teaching modules.

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Innovating Organic Chemistry Education through a Board Game

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Idea: An innovative board game that teaches university-level organic chemistry in a manner that is tangible, affordable, and fun.

Need: Organic chemistry is seen as a barrier that students must overcome in order to pursue careers in medicine or research. Nationally, an estimated 30,000 aspiring doctors are not accepted to medical school, many because of this class. Specifically, nearly 11% of college students who take organic chemistry in America fail yearly. At UC Berkeley, organic chemistry has twice the failure rate compared to other courses. This adverse impact further increases for women and students from underrepresented minority (URM) groups disproportionately. Many students take the course with no previous experience or exposure to the subject. There is a need for medical educators to further understand and reduce this disparity. This is why they created, React! the Organic Chemistry Game, so anyone can learn the fundamentals of organic chemistry. Developed by nine UC Berkeley graduates with a shared passion for teaching, REACT!™ makes STEM education accessible, affordable, and fun.

Methods: To ensure academic integrity, we frequently consulted UC Berkeley professors over the course of 3 years. In React! every player is a scientist that needs to synthesize particular compounds. Players do this by discovering and utilizing fundamental organic chemistry reactions. With this game, organic chemistry becomes less intimidating and more thought-provoking and fun! Each facet of the game to stimulate open-ended problem solving and to destigmatize the fear that often accompanies organic chemistry. We aspire to show students across the globe that organic chemistry need not be overwhelming; rather, it can be a fun experience that fosters critical thinking - much like any other board game! Following the development of the game, React! launched with a successful Kickstarter campaign in the summer of 2017, where we crowdfunded more than $15,000 in less than two months. The project then earned additional funding by winning the Big Ideas at Berkeley contest - a global entrepreneurial contest with more than 310 international submissions. These funds allowed us to manufacture over 2000 copies of the game by the end of 2018. For marketing, we utilized social media, campus ambassadors, and traditional media. The game has been featured by ABC7 News, Americal Chemical Society, Chemical & Engineering News, UC Berkeley College of Chemistry, Western University of Health Sciences, and NPR radio show How I Built This. Manufacturing and marketing allowed us to broaden our impact.

Evaluation Plan: After each playtest, we ask all players to complete a survey to give any feedback on what aspects of the game they liked and what improvements we can make. Previous playtesting events were held at UC Berkeley Chem 3A course, Stanford University Health Disparities and Research course, and local community events. We have even done play testing with UC Berkeley professors such as Dr. Pete Marsden and Dr. Anne Baranger and have received great advice in regards to improving our game logistically. Further research will include a cohort study at UC Berkeley to assess students' organic chemistry grade improvement following the use of the game.

Potential Impact: Ultimately, we see React! reducing one of many educational disparities in medicine. Playing React! shows that organic chemistry is not about rote memorization of complicated molecules, but rather solving visual puzzles. We are confident that React! will serve as a vital tool for all students.

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Cardiac Murmur Small Group Activity for Preclinical Medical Student Learners

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Idea: Creating an interactive cardiac murmur small group exercise for medical students using multimedia, social negotiation and group ownership of learning.

Need: A growing concern in the medical community is a declining emphasis of new medical students' and residents' physical exam skills. One of the greatest areas of deficit is the cardiovascular exam, particularly auscultation of valvular pathology [1]. It is important for medical students to become proficient with the different types of heart murmurs because patients with valvular disease are living longer and there are continuing advances in the medical field in diagnosing and treating these conditions [2]. As of now, experience with valvular disease is greatest during students' clinical years. However, it is largely an independent learning experience due to limitations in the number of students listening at once. First and second year students (MS1s, MS2s) traditionally have less exposure to valvular disease as it can be difficult to get Standardized Patient Encounter actors with heart murmurs. For this reason, we have created an innovation in the Clinical Foundations course offering MS1s and MS2s the opportunity to learn about valvular heart disease and its pathophysiology in a small group setting. Our goal with this change is to allow for collaboration and further achievement of the learning objectives.

Methods: This session will be a team based learning exercise for the MS1s and slightly modified for MS2s. Students will review learner responsible content prior to the session, including the Cardiovascular Exam chapter from Bates Physical Examination Guide [3] and several Youtube videos on cardiac murmurs (Osmosis and Khan Academy). The MS1s will participate in a Physical Examination Session where they will practice the cardiac physical exam with normal heart sounds. The MS2s have a standardized patient cardiac case that they participate in. Both groups (separately) will have a 2 hour small group sessions (8-12 learners per group) lead by a core faculty member. The students will complete a multiple choice pre-test, followed by completing a Cardiac Murmur worksheet and then a post-test. The worksheet consists of 11 murmurs with 9 associated murmur characteristics (shape, cause, best heard at, position of patient, etc) in table format. Students are provided with 1-2 characteristics of each murmur and are required to fill in the rest. They are then given iPads with unlabeled audio that they listen to and match with the murmurs in the table. Each group has a 6-way audio splitter to encourage teamwork and collaboration. After completing the worksheet, students will practice murmur identification on their iPads using a heart sound library application called Heart Murmurs Pro by Hipposoft, LLC. Students will use the app to quiz themselves individually and as a group.

Evaluation Plan: We plan to evaluate our Cardiac Murmur small groups exercise by assessing the students' understanding of the various cardiac murmurs with a pre- and post-session quiz. The students will take a short pre-quiz at the start of the session and then again at the end of the session. The initial pre-quiz will be multiple choice and based on the physiology of cardiac murmurs and their signs and symptoms. After the students participate in the session they will complete a post quiz using the cardiac app, listening to murmurs and identifying them. We will compare the pre and post session scores. In addition, the students and faculty members that participate in the small groups sessions will complete a session evaluation that rates the experience of the session on a Likert scale (positive learning experience, meeting expectations, meeting listed objectives, effective use of time, safe learning environment, enjoyment of the activity).

Potential Impact: By utilizing audio files in the Heart Sound Library app with 6-way splitters, students will collaborate to achieve the learning objectives of our team-based learning activity. Our hope is that it will strengthen new physician's proficiency in identifying and understanding these murmurs.

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Implementation of Case Based Peer Assisted Learning Sessions via Short Interactive Clinical Kases

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Idea: A case-based curriculum to help medical students integrate their pre-clinical learning through near-peer teaching and active team discussions.

Need: As medical school curricula grow more complex and holistic, there is a greater need to ensure students are able to synthesize and integrate new information in an efficient manner. Peer assisted learning (PAL) has been widely utilized in many ways as an effective learning pedagogy, based on the theories of cognitive and social congruence. Multiple studies have highlighted successful PAL programs in clinical skills medical education, showing numerous benefits in retention and delivery of information. Given the benefits of PAL, and proven implementation of the strategy in medical education, we developed a novel PAL curriculum designed for medical students in their preclinical years to better synthesize the basic sciences and apply new information. The curriculum is structured around their current in-class topics to provide maximal reinforcement and improved mastery of current coursework.

Methods: Case discussions will involve first- and second-year medical students who participate on a volunteer basis. Discussions will be held for one hour, bi-weekly, and will relate to current course material. Cases are developed, facilitated, and evaluated by second year medical students with faculty mentorship and guidance, and teams of 4-6 will discuss the case. Beyond a basic methodological format, students can improvise on case scenarios as they wish. Each case will have multiple phases: 1) Initial Presentation: Teams will discuss initial differentials, and based on this, write orders consisting of lab and imaging investigations. While waiting for the results, open-ended thought questions are answered regarding the initial patient presentation. 2) Order Results and Interpretation: Investigation results are provided, and teams have the opportunity to revise their differential diagnosis, request further orders including specialist consultations, and initiate therapeutic interventions. A second round of thought questions are answered. 3) Large-Group Case Discussion: The student facilitator leads a discussion where key points of the case are stressed by the facilitator and a case summary is provided to all participants. 4) Multiple-Choice Quiz: Teams complete a short multiple-choice quiz that focuses on both basic science and clinical aspects of the case. 5) Participant Survey: The final activity is the completion of a survey that explores participants' experiences and seeks feedback.

Evaluation Plan: Student answers on the quizzes and relevant exams will be used to assess improved learning and retention of topics. Secondly, student participants will be asked to complete a survey that explores students' enjoyment of the experience, their perception on the adequacy of their peer facilitators, and the program's impact on their learning in order to identify crucial aspects of peer to peer learning and the program. Furthermore, student facilitators will also be asked to complete a survey that explores their experience as a tutor, identifying changes in learning/understanding, delivery of information, and retention of knowledge. We would also like to explore how participating in this program may affect participants' readiness for clerkships. Lastly, a core group of student participants and facilitators will be asked to complete an exit interview after program completion, which will be used for thematic analysis on the utility of participating in the program.

Potential Impact: Implementation and evaluation of this program will highlight a novel way peer assisted learning can be utilized to improve pre-clinical education through focused content integration utilizing near-peer teaching and learning in a fun and engaging environment.

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The PEGASUS Games:
Physical Exam, Gross Anatomy, phySiology And UltraSound Games For Preclinical Med

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Problem Statement: A curriculum for preclinical medical students integrating anatomy, physiology, physical exam, radiology, and clinical ultrasound through gamification.

Rationale: Gamification, defined as "an approach to teaching and learning where we design more motivational learning experiences by using methods from game design", engages learners and improves knowledge retention [1]. This method of instruction has successfully taught point-of-care ultrasound (POCUS) to residents and fellows [2,3]. But current POCUS education utilizes a one-size-fits-all philosophy for all levels of knowledge. Games created to teach POCUS were designed for residents and attendings, and medical students are expected to rise to this level of knowledge. Moreover, little has been done to incorporate various modes of diagnostics with the physical exam and physiology during the preclinical years. We designed a method of education that caters to the knowledge base of preclinical students and utilizes game design taken from POCUS education as a vector. We hope this will promote the integration and retention of clinical information and encourage teamwork among students.

Methods: 20 first-year ultrasound-naïve medical students from Case Western Reserve University participated in a two-hour session where they learned neck anatomy and radiology, reviewed thyroid physiology and pathology, and practiced physical exam maneuvers involving the neck. Ultrasound-naïve included all students with 30 hours or less of prior ultrasound experience. Students were randomly assigned to a Game or Non-Game group, and all students completed a pretest to gather demographic data, assess prior knowledge about session topics, and determine group differences. Each group was taught ultrasound basics through a short instructional video created by study investigators. Students randomized to the Game group were split into three groups, watched additional videos relating to the station topic, and participated in a self-guided game at that station. Students randomized to the Non-game group were also split into three groups and watched the same videos but were taught the station material by an instructor. Both groups then took one version of 2 previously validated post-tests. The Game group completed post-test A while the Non-game group completed post-test B. As a final challenge for the students, the groups competed in an ultrasound-based escape room. 2 weeks after the session, both groups will take the post-test they haven't taken yet to assess material retention. Group differences and post-test scores were assessed using t-tests. Experience was evaluated using a Likert scale.

Results: 8/10 students in the Game group were male and 2/10 female. Average age was 25.3 years. All had completed a degree related to science or healthcare, and 9/10 reported prior healthcare volunteer or work experience. 3/10 students in the Non-game group were male, 6/10 female, and 1/10 preferred not to say. Average age was 23.4 years, and, again, all had completed a science or healthcare-related degree. However, only 5/10 reported prior healthcare volunteer or work experience. Most students (19/20) had <10 hours of previous ultrasound experience, though one student in the Non-game group reported 30 hours. There were no statistically significant group differences on the pretest when comparing prior knowledge of the session topics between the two groups ($p = 0.4313$, CI = [-0.0966, 0.217]). The Game group performed better than the Non-game group on the post-test immediately following the educational component of the session ($p = 0.007$, CI = [0.0305, ∞]). Retention data will be analyzed following each group's completion of the second post-test. Students in both groups felt more confident in their knowledge of the material immediately following the session, and 10/10 of students in the Game group agreed or strongly agreed that the games encouraged teamwork. Most (9/10) agreed that the games allowed them to learn the material better and did not hinder their learning. 8/10 would like to see more gamification in their medical school curriculum.

Potential Impact: Creating a curriculum that integrates all clinical disciplines can help preclinical medical students synthesize concepts and better prepare for the wards. Our educational model utilizing gamification not only improved learning and promoted teamwork but we hope will improve material retention.

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Constructing Multiple Choice Questions as Teaching/Learning Tool.

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Problem Statement: Traditional method bypasses the active processing of the material & appear monotonous, so there is a lack of student involvement in learning process.

Rationale: In the conventional method, there is a lack of student involvement in the learning process & may not lead learning to occur at many levels, from simple recall to problem-solving, thus the purpose is defeated. Innovations in teaching /learning methods in education enhance both teachers and learners motivation, makes student to get involved actively in the process of constructing multiple-choice questions & thus enhances the understanding of the topic.

Methods: Type of study: Prospective study. Study group: Medical undergraduate students of Pathology at BLDE(DU) Shri B M Patil Medical College, Hospital & Research Centre, Vijayapura. Sample size: 35 + 5 students. Sampling method: Purposive sampling. Inclusion criteria: All the students of II phase I term (III term) who is willing to participate in the study. Exclusion critera: Students who have already read the topics before the intervention of the program. Plan of statistic analysis: Diagramatic presentation to know the efficacy of interventon. Ethical committee clearance obtained. 72 Students were volunterly selected Consent was taken by students. Students underwent orientation program for construction of multiple choice questions before intervention. Students were divided in to two groups. (A&B) Vascular events & Cellular events of acute inflammation were chosen as topics. Group A- Constructed MCQ on Vascular events (30 minutes) Group B- Went through conventional class (30 minutes). For Cellular events, crossing over was done (30 minutes each group). Feedback from students was also taken to know the effectiveness of program.

Results: Responses to feedback questionnaire was taken about understanding of the topic, student involvement in learning following Likert scale format. Two groups were compared & the means and SD of each groups were documented. A p value ≤ 0.05 considered as statistically significant. 87% of students said they enjoyed the session & understanding of the topic was enhanced by this learning tool- mean(3.83 ± 0.38) . There were significant differences in the mean score and SD for understanding of the topic ($p=0.04$)

Potential Impact: Constructing multiple choice question enhances the understanding of the topic, may be used for other topics thus overall understanding of the subject will be better.

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Interactive Checklist as Medical Student Introduction to the Critical, Undifferentiated Patient

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Idea: An interactive checklist for medical students designed for rapid cycle deliberate practice simulation to improve management of critical ill patients.

Need: Undergraduate medical education in critical care is largely elective, scattered, and highly variable, resulting in a significant knowledge gap when student physicians try to care for unstable patients [1]. This results in a knowledge gap between what medical students learn and what is required to care for unstable patients as an intern or resident. Studies of medical students show that diagnostic uncertainty in clinical scenarios results in increased stress from fear of making mistakes [2]. This stress is likely amplified when caring for critically ill patients as they must rapidly arrive at a working diagnosis with limited information to decide on interventions. Currently, clinical algorithms outlining the approach to the critically ill patient are complex and geared towards experienced providers [3]. Additionally, they deemphasize the subconscious tasks that experienced providers perform at the start of the encounter. Therefore, it is important to design curricular innovations that explicitly outline critical actions to help medical students learn the basic skills required to initiate the encounter with an unstable patient. In aviation, checklists are designed for modern aircraft that are complicated and define a single process path that offers optimum performance for each flight condition. Therefore, a checklist geared towards medical students is needed to decrease clinical uncertainty and guide them through the complicated process of caring for a critically ill patient.

Methods: Our intervention will be implemented on 10-15 first- and second-year medical students. We designed and will implement a dynamic, situation-responsive, “critical care checklist” with competency appropriate algorithms that will act as an interactive step-by-step walkthrough for initiating a critical care encounter. This checklist will be employed in small-group, 1-3 learners, sessions in rapid-cycle deliberate practice simulations that provide direct observation and immediate feedback. These simulations may be paused at any time for clarification or discussion in real-time by either participant. At the end of the program, students will be competent in starting an encounter with a critically ill, undifferentiated patient and gain experience managing these high-intensity scenarios.

Evaluation Plan: Student assessment will consist of post-intervention surveys for satisfaction and perceived knowledge gains. Question and answer sessions will be held between the preceptor and individual students with qualitative analysis, as well as pre- and post-intervention simulations of critical, undifferentiated patients observed by a faculty member trained to evaluate for critical actions. Longitudinal surveys to participants as they proceed through their third or fourth years of medical school will be sent to evaluate self-reported usefulness of the intervention.

Potential Impact: The critical care checklist will serve as an organized method of proceeding correctly through multiple critical actions in high-risk, critically ill patients to improve diagnosis and treatment by decreasing clinical uncertainty and decision-making paralysis.

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Virtual Standardized Patient Encounters in a Psychiatry Clerkship: A Pilot Study

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Idea: to explore the fidelity and clinical utility of virtual standardized patient encounters as a tool for learning the psychiatric interview.

Need: standardized patient (SP) encounters are widely used in medical education to provided students the opportunity to practice history and physical exam skills, as well as, test student competency in these areas. SP encounters are particularly useful in psychiatry clerkship as they can provide exposure to complex clinical scenarios that are specific to the field [1]. However, recruiting and training human standardized patients is a time-consuming process that may be cost-prohibitive for clerkship directors looking to incorporate simulation into their curricula. Virtual standardized patients (VSP) are a low resource alternative consisting of computer-interface encounters, which are a growing technology showing promise in medical student training in psychiatric care [2]. A recently developed VSP's, USC Standard Patient, demonstrated value in developing history taking skills among resident physicians with a mean 85.6% appropriate response rate [3]. To our knowledge, this newer VSP technology has not been tested for its utility as an adjunct tool for teaching the psychiatric interview to medical students. Our pilot study explores the student-perceived fidelity and clinical utility of USC Standard Patient encounters as a tool for learning the psychiatric interview.

Methods: this observational before-after study will be carried out on November 12, 2019 at SUNY Downstate Health Sciences University. The study population is twenty-four 3rd year medical students in their psychiatry clerkship. Qualtrics software will be utilized to administer a pre-encounter survey consisting of 15 multiple choice questions testing student knowledge on psychiatric diagnoses and clinical skills. The students will then complete two VSP encounters through USC Standardized Patient (licensed and administered through Breakaway Games, Ltd. online platform). These encounters will consist of a case of clinical depression and a case of schizophrenia developed by USC Standard Patient and selected by the authors. This will be followed by a post-encounter survey with the same 15 multiple choice questions utilized in the pre-encounter survey with the addition of 13 author developed Likert-style questions on fidelity and clinical applicability, as well as, three free text response questions for comments.

Evaluation Plan: The evaluation plan consists of comparing pre- and post-encounter performance on questions relating to knowledge of psychiatric diagnoses and clinical skills. Further, post-encounter survey questions will be utilized to evaluate students' perceptions on VSP fidelity and clinical applicability.

Potential Impact: This data will provide important feedback on the utility of VSP in student learning and practice of the psychiatric interview. Further, the potential impact extends beyond the field of psychiatry as this technology can be utilized for the development of interview skills for numerous types of healthcare encounters.

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Third Year Medical Student Reaction to Gamification Teaching: A Case Study

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Problem Statement: To evaluate medical student acceptance of gamification in the learning environment.

Rationale: Participation has become increasingly challenging in medical education, with schools using different approaches to motivate and engage students. We sought to gather medical student reactions to a game-like learning session.

Methods: 48 students participated in an OB-GYN review session taught by interactive quizzing. Questions were derived from commercially available question sources, NBME questions and APGO question bank. Following blinded randomization of 5 teams, each used bells to answer questions. Prizes were distributed to the top-scoring 3 teams. Student feedback was collected via surveys using a 5-point Likert scale with 9 questions and areas for free responses.

Results: 45/48 students completed the survey. The mean overall satisfaction score was 3.14. The highest scoring areas were interactive quizzing (mean = 3.51) and recognizing knowledge gaps (mean = 3.42). Comments supporting these scores include, “Team and game-based learning is fun” and “Fun, good way to review material.” The lowest scoring areas of competition (mean = 2.96) and pacing (mean = 2.53) were supported by statements including, “Slower pace with an emphasis on understanding and learning” and “Competition distracted from learning.”

Potential Impact: Students responded positively to interactive quizzing and felt the session helped to identify knowledge gaps. Some students felt that slower presentation and elimination of competition would enhance learning. Interactive gaming may be used to engage medical students in institutional learning session

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Wellness in Undergraduate Medical Education

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Problem Statement: UNLV School of Medicine incorporates wellness activities in medical education to promote healthy coping strategies, mindfulness, and to reduce burnout.

Rationale: There is a higher prevalence of anxiety due to stress and burnout in medical trainees and physicians compared with the general population. Burnout can negatively impact medical students' training, professional development, general well-being, and patient safety. Studies have shown that mindfulness-based approaches are effective in decreasing stress and anxiety in medical providers.

Methods: During the pre-clerkship years, a wide range of wellness activities were offered: yoga, tai chi, mediation, massages, and dance classes. Students were not required to attend any of the sessions and could voluntarily participate in any session of their choosing. Surveys to assess stress levels, attitudes towards complementary and alternative medicine (CAM), and the number of wellness techniques used before the start of medical school and end of basic sciences were completed by 58 students.

Results: There was a significant increase in stress levels ($p < .005$) and significant increase in the number of wellness techniques used ($p < .005$) by medical students at the end of basic sciences. Students who had an increase in wellness activities had a significantly higher CAM attitude score ($p < .005$).

Potential Impact: In general, students who were more stressed increased the number of wellness techniques used. Students who had higher stress levels reported using more wellness activities that were offered. Thus, early exposure to wellness builds a foundation of techniques students can use during stressful times.

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Burnout and Wellness among Residents Across Disciplines: A Pilot Examination Update

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Problem Statement: This ongoing project has been evaluating various factors associated with burnout, satisfaction, and perceptions of wellness in residents.

Rationale: Literature in the field reveals that the prevalence of burnout may peak during medical education, including medical school and further training (i.e., residency). The implications of burnout are far-reaching, having an impact on both professional care delivery and self-care. Professionals who provide health and human services stand out as a group at a particular risk for burnout. Research has previously indicated that lower rates of burnout are an indicator of wellness, but this has not been appropriately validated empirically. The importance of wellness, however, is so entrenched in the culture of clinical practice that medical education settings have introduced policies in recent years to promote well-being among learners. Longstanding theories of career development that extol the importance of strong self-concept and satisfaction as well as the simultaneous attention given to burnout and wellness in the literature suggest that their relationship is likely beyond contrived.

Methods: Using a model previously employed with an international healthcare staff, residents in neurology, child neurology, and psychiatry were administered the Maslach Burnout Inventory Human Services Survey for Medical Personnel (MBI-HSS (MP)), the Patient Health Nine-Item Questionnaire (PHQ-9), and the Accreditation Council for Graduate Medical Education (ACGME) Well-Being survey questions at 3-4 month intervals. Trainees were provided with a link to an online survey, hosted by a secure server to facilitate anonymity and confidentiality (SurveyMonkey.com). Their participation was/is non-compulsory (i.e., participation will NOT be a requirement of their training or education), and they are compensated for their time ($5 Starbucks gift card). Participants also completed a brief demographic survey. These demographic variables were linked to a generated, anonymous participant ID. No names or identifying information were collected. The anticipated N for the study was 54 residents. In addition to descriptive statistics, means-analyses were calculated within and across groups, as well as examining the goodness-of-fit to the concept of the ACGME well-being questions.

Results: Though data collection is ongoing (study design is longitudinal), data points have been collected thus far from 25 respondents. Based on assessment of trainees' emotional exhaustion, depersonalization, and personal accomplishment, 68% (17 of 25) have at least one symptom of burnout. However, a majority of trainees still found work to be meaningful. There were 9 individuals with mild depression and 2 individuals with moderately severe depression based on PHQ-9 scores. Items scoring highest tended to reflect issues with tiredness, appetite, and concentration. Of the trainees with mild or moderately severe depression on PHQ-9, all but one had at least one symptom of burnout based on the MBI. When responding to ACGME well-being questions, 36% felt the vitality to do their work often or very often while 16% were eager to come to work often or very often. A majority of trainees felt vitality to do work only sometimes (48%) or rarely (16%) while most sometimes were eager to return to work (60%) with 8% and 16% rarely and never being eager, respectively. Despite these results, 60% of respondents felt supported by co-workers and were proud of their work often or very often.

Potential Impact: These results are informing additional experimental intervention aimed at burnout/wellness deficits. Findings have also inspired the creation of wellness initiatives for faculty. Other residency programs have expressed interest in future research participation and adapting similar wellness models.

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Telling Great Stories:
Improving Communication Skills and Resident Well-Being Through Storytelling

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Idea: A storytelling curriculum for physicians that cultivates communication techniques, increases empathy and promotes a humanistic health care culture.

Need: Effective communication among health care providers has repeatedly been proven to be essential in providing top notch care [1]. Furthermore, in a field where workplace burnout is on the rise, especially among young physicians, strong social relatedness has been shown to be one of the key factors associated with resident well-being [2]. Storytelling draws on both the factual and emotional components of practicing medicine and enables physicians to share the pertinent experiences which helped shape their clinical practice. There is currently limited published evidence of storytelling curricula for residency programs, however programs do exist in several medical schools. Storytelling programs in medical schools have been shown to be an important, unconventional means of enhancing communication, collaboration and professional development [3].

Methods: This intervention will focus on the 150 internal medicine residents in our program and take place over two years. Storytelling sessions will typically be one hour in length and will be held during noon conferences once a month. Sessions will be open to all residents and led by experienced storytelling facilitators. The goals of these sessions are to increase awareness of storytelling, engage residents, and provide them with a platform to process and reflect on impactful moments. The sessions will involve ice breaker games, activities which prompt residents to tell stories, and a story told by a medical professional, patient or care provider. In addition, smaller more intensive sessions will be held bi-monthly to coach residents who have a story to tell publicly to the group. In these sessions, residents will hone their stories and learn techniques to speak publicly with confidence. The goal over the course of the first year is to coach a cohort of residents on effective storytelling techniques so that they can become facilitators the following year. We also hope to develop a roster of activities that can be transcribed into a reproducible curricula.

Evaluation Plan: Monthly storytelling sessions will be evaluated through the review of resident responses to standardized questionnaires which pull questions from previous surveys which measure comfort with public speaking, empathy and human connection. Examples of standardized surveys include the Jefferson Scale of Empathy and the Human Connection Scale. In addition, attendance will be recorded and measured in two ways – we will measure total attendance and unique attendees. We will compare overall scores on surveys at the beginning and end of the year taken by residents who attended 2 or more sessions.

Potential Impact: A storytelling curriculum will enable residents to voice and acknowledge their experiences, communicate confidently and passionately, foster social relatedness and ultimately improve physician wellness.

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Mindful Self-Compassion to Improve Empathy and Feedback Receptivity

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Idea: Increase compassion, empathy, and receptivity to feedback in pediatric residents by delivering a brief educational session on mindful self-compassion.

Need: Physician burnout causes significant increases in unsafe patient care and decreases in physician professionalism and patient satisfaction. Pediatric residents experience burnout at a rate of 39% nationally [1]. Neff's and Germer's 8-week mindful self-compassion program showed significant benefits on participant mindfulness, self-compassion, and wellness [2]. Dundas also produced significant benefits with an abbreviated 2-week program [3]. Due to duty hour restrictions and expanding clinical competencies, pediatric residency programs have limited capacity for formal mindfulness training programs. The proposed curriculum meets this challenge by teaching self-compassion through a 1-hour workshop session followed by 5 minute refreshers to practice specific mindful self-compassion techniques that may be applied during the normal course of a physician's work.

Methods: The intervention will target 24 PGY-1, -2, and -3 residents at a single pediatric residency program. One month prior to the intervention, participants will take a baseline Mindful Self-Compassion Questionnaire, Jefferson Physician Empathy Questionnaire, and a Feedback Receptivity Questionnaire. The initial workshop will be 1 hour long and presented at the program's standard Tuesday afternoon didactic session. Participants will learn about the logic behind Mindful Self-Compassion as well as specific MSC practices that are applicable to physicians' daily work. In small groups, they will have the opportunity to reflect on and discuss MSC, practice specific techniques, and ask questions. Following the workshop, for each of the subsequent four weeks, the residents will get 5 minute refreshers and practice opportunities introduced at the workshop during their Tuesday afternoon didactic. These practices will be targeted at specific challenging situations faced by pediatric residents: delivering empathetic care to challenging patients, receiving constructive feedback, understanding patients' needs more efficiently, and building personal resiliency and wellness. The refreshers will not only give the space to practice, but also resources for those who have further questions or interest.

Evaluation Plan: Accountability will be measured by resident attendance at the in-person session, commitments to act during the session, and by frequency of residents' accessing the "further information" resources during their refresher sessions. Learner reaction to the sessions and commitment to change will be measured via written survey immediately after the one-hour workshop. Impact on target learners will be measured via Mindful Self-Compassion Questionnaire, the Jefferson Physician Empathy Questionnaire, and the Feedback Receptivity Questionnaire, repeated at the end of the workshop, 3 months later, and 6 months later. Self-reported behavior change (e.g., frequency of engaging in the recommended practices) will be measured via written survey administered with these inventories.

Potential Impact: Residency programs seeking to combat burnout and promote compassionate care will be able to implement this program with trainees facing overwhelming demands on their time and attention.

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iRISE: Initiative for Resiliency, Introspection, Self-Care, and Empathy

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Idea: A learning modality designed to equip physicians with the skill-set necessary to RISE above emotional stressors inherent in the fields of geriatric and palliative care.

Need: Physician burnout, defined by emotional exhaustion, depersonalization and low personal accomplishment is an underrecognized phenomenon that begins early in training. With both nursing home and palliative care physicians reporting high levels of emotional exhaustion, there is a national need for resiliency training to sustain the care of patients with serious illness. iRISE (Initiative for Resiliency, Introspection, Self-Care, and Empathy) is a novel pilot curriculum that provides an opportunity for Kaiser Permanente Geriatric Medicine and Palliative Medicine fellows to process difficult cases and learn skills to optimize wellness, resiliency and clinician empathy. iRISE provides a longitudinal, year-long curriculum which incorporates both Balint groups and skill-set training to enhance self-care and compassion.

Methods: Palliative social workers who are Soul Centered Facilitators deliver the iRISE curriculum to the three Geriatric Medicine and Palliative Medicine fellows in our programs. These monthly iRISE sessions are comprised of two components, each designated one and a half hours. 1) Spiritual Psychology Skills Training: This skill-set utilizes spiritual psychology, which joins spirituality, defined as non-religious exploration of meaning in one's life, with everyday experiences in an effort to foster a more peaceful and content state of being. Learners develop 10 skills to enhance empathy and resilience through didactics and practical application. 2) Balint Group: Fellows participate in a Balint group, where they deeply examine emotional clinical cases. The Balint group is limited to fellows only to promote a psychologically safe environment that encourages open and honest discussion.

Evaluation Plan: To measure the efficacy of the iRISE curriculum, fellows will complete the Maslach Burnout Inventory Human Services Survey for Medical Personnel (MBI-HSS MP) before and after curriculum completion. MBI-HSS MP is tailored for health professionals and addresses the three main components of burnout and empathy. The results will be statistically analyzed to determine if there is a significant impact on our fellows' well-being during the academic year. In the future, this data can be compared to Accreditation Council for Graduate Medical Education (ACGME) well-being surveys.

Potential Impact: By integrating lifelong, self-care skills to improve resiliency, well-being, and empathy, iRISE will be an effective method to prevent physician burnout for all medical learners.

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First Year Medical Student Strength and Exercise Based Education for Physical Activity Counseling

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Idea: Training first year medical students to teach a community-based exercise class in order to improve student confidence towards exercise counseling.

Need: Research has shown the benefits of regular exercise in the context of chronic disease management. However, there is a lack of undergraduate medical education focused on teaching future doctors how to counsel patients about physical activity. A recent study demonstrated that more than half of the medical schools surveyed offered no formal course related to physical activity in 2013 [1]. The deficiency of physical activity education in medical school curriculum is consistent with a 2010 survey noting that only 32% of patients received physical activity counseling during their physician office visits [2]. There is currently a gap of knowledge regarding the impact of structured physical activity specific education in undergraduate medical education. A specific area of interest is the impact of such education on medical students' confidence to discuss physical activity during patient encounters. There are a limited number of studies evaluating physical activity specific undergraduate medical education. However studies looking at teaching health behavior changes shows that combination of learning modalities including interactive simulation based as well as didactic format are most effective [3].

Methods: The participants will consist of first year Primary Care Program (PCP) Medical students (N-24). These students will receive didactic lectures on exercise counseling and a separate lecture on how to teach the "Keck Core and Strength Exercise Class" which is offered at the Wellness Center. The "Keck Core Strength Exercise Class" consists of a 10-week community-based program offered in the Fall and Spring. Each 1-hour session is led by a group of three second-year medical students in both English and Spanish and under the supervision of physician faculty. The students prepare a presentation tackling a different subject related to physical activity. After the presentation the students lead the exercise portion which consists of strength/resistance training as well as flexibility and balance. Throughout the year first year medical students will have the opportunity to apply the skills developed during the didactic sessions by shadowing during the exercise class with the goal to eventually lead the exercise class in the Spring. While all the participants will receive the didactic lectures, teaching the exercise class is on a volunteer basis.

Evaluation Plan: A post-survey will assess the subjects' knowledge of exercise and their confidence and frequency in discussing exercise during patient encounters. Statistical analysis will be conducted to assess the effect the exercise lecture has on student confidence regarding physical activity and exercise counseling during patient encounters.

Potential Impact: If we want future physicians to be equipped to counsel patient about physical activity, then we must provide the proper education and opportunities that allow them to practice this skill. The Primary Care Program lectures and Core Strength Exercise Class are designed to meet this need.

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The Impact of Participating in Humanities Electives on Wellbeing Among Medical Students

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Idea: Evaluating the role of humanities and medical improv in the well-being and development of medical students at the UCSD School of Medicine.

Need: Medical students face tremendous pressure to excel, leading to increasing stress and rising rates of anxiety and depression [1]. Diminished well-being not only inhibits a student's performance, but also increases the likelihood of physician burnout and its subsequent negative sequelae. Medical schools have begun to focus on improving the well-being of medical students, not only to increase performance but also to support them as human beings and clinicians in the long-term. Medical humanities courses have been found to improve empathy and compassion among students when they interact with patients, while also decreasing burnout [2]. While these courses have traditionally focused on literature to explore patient narratives, medical humanities have recently expanded to include performing arts—and of particular interest, medical improv. Medical improv takes the basic ideas of improvisational theatre and applies them to clinical situations. Given the unpredictable nature of clinical medicine and the increasing stress and pressure that physicians face, lessons learned in medical improv can reap benefits for medical students not only in their training but also in their personal well-being. The aim of this study is to examine the effects of medical humanities education, in particular, medical improv, on the well-being and development of medical students. In addition, we hope to examine how different medical humanities courses influence medical students' well-being.

Methods: Students participating in humanities electives at UCSD SOM during the 2019-2020 academic year will serve as the intervention group. Courses include: Medical Improv: Playing Doctor (improv), The Healers' Art: Awakening the Art of Medicine (mindfulness), Understanding the Application of Meditation to Medicine (meditation), The Doctor will SEE you now (art appreciation), and Drawing as a way of seeing: representing the human body (art). Students not enrolled in a humanities elective and are taking the AAMC-designated course, Careers in Medicine, will serve as a comparison group. This course introduces students to different specialties in medicine to help guide their career choices. Survey instruments will include screening tools for depressive symptoms (PHQ2) and burnout (Oldenburg Burnout Inventory) as well as questions specific to elective course participation, such as "Participation in this elective helped improve my communication skills."3 Students will complete the survey online 3 times: 1) before the first week of instruction; 2) at the course completion; and 3) 6 months after course completion. Survey responses and scores from humanities courses will be compared to those of students in the control group to evaluate the association between participation in the humanities-focused course and self-reported depressive symptoms, burnout, well-being, and impact on future clinical career. All responses will be confidential and only aggregate data will be reported.

Evaluation Plan: Student scores on PHQ2, Oldenburg Burnout Inventory, and answers to qualitative questions will be compared between intervention and control groups as well as within different humanities electives. In addition, survey results will be compared pre/post-course to evaluate the effect of medical humanities curricula on student well-being.

Potential Impact: Data collected will inform further curriculum development and insight into the effects of different interventions on student well-being.

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Suicide Care in Primary cCare: Addressing the Need in Family Medicine

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Idea: An approach utilizing various research and developed tools from accredited resources were developed to meet the need to improve suicide care.

Need: In the U.S. an estimated 45% of those who died by suicide saw their primary care physician in the month before their death. Suicide ranks as the 10th leading cause of death in the United States and it has been noted as a public health problem [1]. Studies on mental health and its relationship to primary care have identified that about 80% of people with a behavioral health disorder will visit a primary care provider at least once a year [2]. Being that primary care providers are most likely to see patients at risk of suicide in the month before a patient's death, there is a need to intervene early in the development trajectory of the depression and suicidal behavior [3]. Since there have been a number of prevention efforts that have been developed in the past decade to intervene early, a process and approach was developed utilizing various information and tools to formulate an approach for our family health center.

Methods: 21 medical residents in the health care center, nurses, and administration staff will be participating in education focused on enhancing their skills in assessment of suicide care, identifying and clarifying duties within their scope of practice, and reviewing the protocol/approach for the family health center through education on suicide care. Educational reviews on the protocol will be conducted by behavioral health faculty with all identified stakeholders at the family health center on a bi-annual basis. Behavioral medicine faculty will be available for consultation on an as needed basis. The SAFE-T: Suicide Assessment Five-Step Evaluation and Triage for clinicians training approach inclusive of the phone application, the PHQ-9, the Columbia Suicide Rating Scale, and Safety Planning Agreement template are tools utilized to empower and enhance the suicide care skills of our family health center providers. Additionally, a self-care component through education and activity will be conducted to bring awareness to cues that may signal burnout, self compassion, gratitude, resilience, and finding meaning/purpose in life and the work that healthcare providers do will be incorporated throughout their bi-annual trainings.

Evaluation Plan: To evaluate the effectiveness of the educational process and SAFE-T approach, a self-report questionnaire will be implemented on a quarterly basis. Additionally, the PHQ-9 and the Columbia Suicide Severity Rating Scale will be tracked and a chart review of the approach to suicide care will be conducted. At the annual training, a 10 item quiz on suicide care will be conducted to evaluate the providers, nursing staff, and administrative personnel knowledge on policies, procedures, and approach. The outcome of these results will be analyzed and reported on an annual basis and be utilized as an informational tool to celebrate gains and obtain feedback on areas that need to be strengthened.

Potential Impact: If successful in our approach, demonstration of the efficacy in assessment, creating robust ways in tracking assessment efforts and enhancing accessibility to suicide care resources, can serve as a model for providing effective preventive, interventive, and postventive care in primary care/pcmh.

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Eat, sleep, move; a healthy lifestyle curriculum to improve medical student wellbeing

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Idea: The use of a healthy lifestyle curriculum with first year medical students to promote personal wellness through diet, exercise and sleep.

Need: The Liaison Committee on Medical Education requires that a 'medical school has in place an effective system of personal counseling for its medical students that includes programs to promote their well-being and to facilitate their adjustment to the physical and emotional demands of medical education [1]. Although Keck School of Medicine has many programs in place to provide structured psychological support to medical students, a gap exists in the curriculum to promote physical wellbeing. Exercise, sleep and nutrition are tested methods of promoting wellness and combating stress and burnout. Ayala et al. [2] surveyed medical students about self-care and showed their responses to be grouped into several categories including physical activity, nourishment, hygiene (including sleep), balance and relaxation. Ayala's further work [3] suggested that students with good self-care had self-reported lower levels of stress and higher quality of life. Many students do not make healthy life choices during medical school which may contribute to their poor physical and mental health. Many strategies have been tried, but there is very little evidence on proven mitigating factors for medical student stress and burnout. We propose a healthy lifestyle curriculum to promote physical wellbeing through healthy diet, good sleep hygiene and exercise.

Methods: The students in this pilot project will be the 24 first-year medical students in the primary care program at the Keck School of Medicine of USC. Six one-hour sessions delivered at lunchtime over the first 12-weeks of medical school will be given. The objective of the curriculum is for, students to be able to 1) generate healthy meal, exercise and sleep plans that will work for their lifestyle; 2) make healthy life choices on a daily basis, and 3) better able to negotiate healthy life choices with patients. Their plans for healthy meals, exercise and sleep are a form of commitment to act. Teaching will take account of prior knowledge and behavior to enable learners to learn from each other (also actively participating in constructing their knowledge) and explore the value and relevance of the material to increase learner motivation. The teaching methods will include short didactic components, video clips, small group activities with debriefing, brainstorming and peer-to-peer teaching. In the first session, prior knowledge will be assessed, sessions 2-6 will begin with brief reflections on progress toward meeting their own goals making their meal, exercise and sleep plans. As the sessions progress, we will also discuss barriers and ways to support each other in building and maintaining a healthy lifestyle. In addition, we are helping to further build their learning community through working together to enhance health and resilience.

Evaluation Plan: The evaluation will include 1) accountability in the form of tracking session delivery, attendance and submission of "assignments"; 2) Reaction data will be gathered using a standard course evaluation form to assess the organization, content and instruction and about their perceptions of the group as a learning community; 3) Learning – student plans (healthy meals, exercise, sleep) will be reviewed to ensure that they reflect a healthy achievable lifestyle, using a standardized rubric; and 4) behavior changes will be tracked informally throughout the course and formally in a end of course questionnaire. We will also be gathering information about supportive factors and barriers to making lifestyle changes while being a first-year medical student.

Potential Impact: Our hope is that completing this curriculum, medical students would report that they are physically healthier and better equipped to handle the emotional strain of medical school than previously. If successful, this curriculum could provide a model for any health professions' education program.

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Online Art Blog as a Method to Promote Emergency Physician Wellbeing

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Idea: An online art blog dedicated to showcasing the creative side of EM physicians to promote their hobbies and well-being.

Need: Emergency medicine has a high rate of physician burnout in comparison to other medical specialties possibly due to organizational dynamics, increasing workload, and emotional exhaustion [1]. Indeed, there has been a call by many emergency medicine organizations including the American College of Emergency Physicians (ACEP) to increase physician awareness to wellness. ACEP's definition of wellness includes the following eight pillars: occupational satisfaction, emotional support, physical health, finances, spiritual, social, intellectual, and participation in wellness activities [2]. Utilizing recreation, hobbies, and exercise has been shown to be significant wellness strategies in physicians of other specialties with high well-being values on standardized scales [3]. Interventions that facilitate and encourage emergency physicians to pursue their hobbies are needed to promote multiple aspects of their well-being as organizational change is implemented.

Methods: Specifically aiming to target the well-being pillars of social wellness and participation in wellness strategies, Art of Emergency Medicine is an online art and literature blog (artofemergencymedicine.com) that was created to promote emergency physicians' well-being. The website provides an online venue for physicians to share their work and stories of how their art contributed to their wellness with other providers. Contributions are made from providers spanning the full spectrum of emergency medicine (physicians, nurses, EMT, residents, etc.). Each selection consists of the piece and includes a 300-word maximum essay on the inspiration for the piece or its effect on well-being. Physicians are able to make multiple contributions. The website then produces monthly volumes of art curated by a five-member selection committee and promotes the release via email and social media posting. Ideally, the website will continue indefinitely as a permanent creative outlet for numerous emergency professionals.

Evaluation Plan: Monthly volumes will be released to the emergency medicine community at large and a survey will be sent out to both contributors and subscribers to complete a survey that aims to gauge their pre- and post-submission/viewing experience on a 7-point Likert scale. The ultimate aim is to gauge the impact of the website on physician well-being. The survey will also address the overall goal and assess whether the presence of the website has encouraged physicians to pursue their out artistic hobbies and self-reflection.

Potential Impact: Implementation of this website will contribute to emergency physician well-being by promoting self-reflection and pursuit of hobbies outside of medicine in a model that may be implemented by other specialties as well.

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Nighttime TEAching: a wellness inspired hands-on learning curriculum for Pediatric Residents

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Idea: A Nighttime TEAching curriculum that focuses on resident wellness and experiential learning on hospitalized patients and those with medical complexity.

Need: ACGME duty hour restrictions have increased the need for residency programs to incorporate night float systems thereby limiting resident participation in traditional daytime educational conferences. Meanwhile, the 2009 Institute of Medicine (US) Committee on Optimizing Graduate Medical Trainee Hours recommended incorporating more simulation based and hands-on training for medical residents. The large academic pediatric residency program at Children's Hospital Los Angeles has requested the hospitalist division to organize and facilitate a nighttime teaching curriculum. The population of children CHLA serves includes a large proportion of children with medical complexities. Overall children with medical complexities may represent <1% of children however account for over a third of overall medical expenditure, and the bulk of hospital admissions, therefore residents would benefit from increasing simulation training and knowledge of these type of patients and their unique needs.

Methods: For 2 nights per week a pediatric hospitalist attending will conduct a 20-minute teaching session with the eight available pediatric residents and any additional rotating medical students available on their night shift. Resident wellness and participation is enhanced by providing tea and healthy snacks while the hospitalist attending will facilitate one of 12 new core teaching sessions focused on acute care of hospitalized pediatric patients at night. One session involves learning to perform and interpret electrocardiograms. After which one pair of residents will volunteer to perform an EKG on each other. Additional sessions focus on technology dependent children and how to manage and trouble shoot issues with tracheostomy tubes, enteral tubes and chest tubes in the night; with the goal of simulation training on mannequins or teaching at bedside when possible. Other sessions include medication tasting, pediatric formulas tastings and blood gas interpretation.

Evaluation Plan: A 6-digit code provided to the residents at the end of the teaching session will be entered into the EEDs evaluation mobile application. It utilizes 5-point Likert style questions as well as fill in the blank responses for assessment of attending knowledge and engagement, whether or not the resident feels more comfortable managing that clinical entity at night after the session and how to improve it. Information from these surveys will be used to improve the learner experience and content material.

Potential Impact: Increase resident comfort in managing hospitalized children including those with medical complexity thereby providing proactive and not reactive care. To foster a nurturing environment for resident education and increase collegiality between the hospitalists and residents.

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Do Self-Efficacy and Grit Predict Success in a Self-Guided Simulation Intervention for Physicians?

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Idea: To determine what qualities best predict procedural skill improvement using a novel longitudinal self-guided simulation intervention for physicians.

Need: Emergency Physicians (EPs) must maintain numerous rare but critical procedures throughout practice. However, because of the rarity of such procedures, the presence of learners, and the fear of judgement from others, EP competency in these skills diminishes with time. A self-guided educational intervention, which uses simulation to allow physicians to practice procedural skills, may prove valuable, but this has not been studied in independent physicians. Additionally, physicians with certain characteristics, such as those with higher self-efficacy or grit, may be more likely to benefit from these interventions than their peers. Medical education studies often aim to improve self-efficacy in health care providers [1]. Grit is a novel concept that correlates positively with medical student success and negatively with physician burnout [2,3]. However, no prior studies have analyzed self-efficacy and grit as predictors of procedural skill improvement in independent physicians using a self-guided educational intervention. Notably, a needs assessment at our institution identified pericardiocentesis as a skill that EPs wanted continued opportunity to practice. Our intervention aims to: 1) address several barriers faced by EPs in improving and maintaining rare procedural skills, 2) provide an opportunity to practice pericardiocentesis, and 3) analyze whether physician self-efficacy and grit predict procedural skill improvement.

Methods: Our study will include fully-licenced EP volunteers from a single large academic centre. Participants will complete validated surveys assessing baseline self-efficacy and grit, and outline their demographic information and prior experience. Then, participants will be asked to perform a pericardiocentesis on a high-fidelity simulation model in a private setting. With prior approval and consent, their gloved hands and the simulation model will be videotaped. The performances will later be scored using a validated assessment tool (i.e. a modified OSATs) by two expert reviewers who will be blinded to the participants, the hypothesis, and the order of the videos. The first performance will compose the baseline score (i.e. the pre-intervention score). Participants will then immediately be shown a validated video demonstrating the ideal performance of the procedure and asked to repeat their performance. This will again be videotaped and scored (i.e. the post-intervention score). Participants will be asked to repeat the surveys and performances at 3 and 6 months later, once again videotaped and scored (i.e. the retention scores). Between filmed attempts, participants will be allowed to practice in the same setting and with a low-fidelity model as often as they want, and at times that are convenient for them, without being filmed. Participants will receive anonymous, personalized feedback from reviewers on their filmed attempts throughout the study.

Evaluation Plan: Our analysis will primarily examine if baseline self-efficacy and grit scores predict improvement of procedural skills at 3 and 6 months through the use of multivariate regression analysis. Other possible predictors analyzed will include: age, training route, years in practice, number of practice attempts on the simulation model, and total time spent practicing during our study. Additionally, we will examine if the intervention was effective in improving overall procedural skill scores, and if this improvement was sustained over 6 months. We will also assess participant satisfaction with the intervention, and collect feedback on which aspects of the intervention were most helpful and what could be improved.

Potential Impact: CME programs should ideally be designed so participants extract the maximum benefit to their knowledge and skills. If self-efficacy and grit are predictors of success in this simulation-based educational intervention, this may inform future interventions to bolster these characteristics in EPs.

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Getting SMART About Residents' Well-Being

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Kaiser Permanente San Jose, Family Medicine Residency

Idea: To enhance residents' QI learning and improve well-being by applying the principle of SMART goals to their personal goal.

Need: The latest Common Program Requirements from ACGM focuses on four areas including quality improvement and physician well-being . Although there has been a lot of work in both areas, there has not been a great deal of focus on how to combine these areas during residency. As quality improvement is a continuous process, the best way to learn is through longitudinal curriculum and the best way to engage learners in QI is to show that it increases productivity and decreases frustration. Residents, who are greatly at risk for burnout between one-third to one-half , would develop a personal SMART goal focused on their well being during intern year and conduct continuous PDSAs throughout their training in an effort to increase their efficiency and professional fulfillment.

Methods: This intervention will focus on 6 family medicine residents in our program over the next two years. The intervention will include: 1). Introduction of SMART goals during QI lecture during intern orientation. 2). Completing QIKAT after QI lecture. 3). Having residents choose a SMART goal that is focused on improving their well-being over their next 2 years of residency 4.) Having quarterly check-ins with the residents to see how they are doing with their SMART goals 5.) Roll out residents QI projects during their R2 year 3.) Repeat QIKAT at the end of R2 year.

Evaluation Plan: It will be easy for the residents to forget about their SMART goal while they are trying to survive residency, so it is key that we develop regular check-ins. These check-ins can be done virtually or face-to-face, we will have to try both methods to see which is more successful and sustainable. Next, we will have to see if there is an actual link to working with a SMART goal and making QI more tangible and relevant. This survey will be completed at the end of R2 year.

Potential Impact: Quality improvement is often thought of as "boring" and improving residents' well-being seems "impossible", however if residents are able to improve one aspect of their personal life by using QI principles, then we may be able to overcome two large barriers.

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Implementing an On-campus Makerspace to Improve Medical Students' Wellness

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Idea: We have created and implemented a Makerspace at UCI School of Medicine for use by medical students and faculty.

Need: There is significant burnout and stress among medical students. A 2019 metanalyses of medical students globally found that 1 in 2 medical students suffers from burnout [1]. Interventions focused on promoting wellness during medical training are necessary [2]. In an effort to combat this burnout and promote student wellness, the Makerspace will provide students with an outlet and space to express themselves through art and technology. The Makerspace will provide an environment for social learning and engagement where students can express their creativity and pursue their interests. Furthermore, the future of medicine is intrinsically linked to technological innovation [3]. We need to equip future physicians with the knowledge and skills to seamlessly adapt to and be a part of technological advancements in the medical field. As noted in an article on machine learning and medical education, "Technology without physician knowledge of its potential and applications does not make sense and will only further perpetuate healthcare costs" [3]. The Makerspace will foster medical student curiosity and knowledge of technological innovations in the medical field. They will not only have the opportunity to better understand the intersection of technology and medicine, but also have the ability to be on the forefront of this innovation and create their own solutions to the various challenges in medicine that they encounter.

Methods: We have created and implemented a Makerspace at UCI School of Medicine for use by medical students and faculty. As of January 2019, the Makerspace has provided various materials including a 3D printer, Cricut, a button maker, paint materials, crocheting materials, and much more for medical students and faculty to utilize. There have been several wellness activities for medical students such as a paint night and a craft day with many more workshops in the works. Medical students have also been able to use Makerspace supplies to make educational and decorative materials for medical student-run events including World of Medicine and the Latino Medical Student Association (LMSA) conference. The goal of our Makerspace is twofold: 1) To provide a space for medical students and faculty to decompress and encourage innovation 2) To better acquaint medical students to the changing landscape of medicine and engage them in technologies that could be applied to medicine such as 3D printing, VR, and AR.

Evaluation Plan: We plan to assess the impact of the Makerspace on medical student well-being by giving out surveys before and after each wellness/creativity workshop during the 2019-2020 academic year. We also plan to assess the impact of the Makerspace on medical student knowledge and curiosity by giving out surveys before and after each educational workshop during the 2019-2020 academic year. In addition, we will keep a log within the Makerspace to track the use of the space by medical students in non-formal settings. This will allow us to better understand how often students seek out the space on their own time and for their own personal projects.

Potential Impact: The Makerspace has the potential to improve mental health, foster an environment where students can learn about implementing various technologies in medicine, and aid in medical education by providing 3D printing services for training medical students and residents in anatomy and clinical skills.

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Anesthesiology Family Day for Improved Wellness and Increased Resiliency

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Idea: Families of Anesthesiology Residents will tour the OR and learn about daily stressors to improve communication with families and resident well-being.

Need: Depression, burn-out and the feeling of being overwhelmed are common and well documented within the medical field, especially among physicians. Anesthesia is one of the fields generally cited as having a higher rate, and it is particularly prevalent during residency [1,2]. There is a need to improve the resiliency of residents, and one mechanism of doing so is to enhance the ability of their families to understand the stressors residents are facing, to facilitate communication, and improve the family members' ability to empathize with their resident. The challenges of anesthesiologists are difficult to understand, even to those who work closely with them in the OR, and the OR environment is one that is foreign to the family members of most Anesthesiologists and residents. Family Days have been implemented within other programs with subjective reporting of improved staff, resident and family satisfaction [3]. We plan to utilize a similar structure, initially focusing on residents. Our program has the added element of providing information on possible assignments following Anesthesiology Residency, which is a topic specifically relevant to the military, but which could be generalized to cover the projected job market environment in a civilian setting.

Methods: The intervention is focused on the 17 current Naval Medical Center San Diego Anesthesiology Residents, spanning all three years. The intervention is a single session, conducted at the end of the first quarter of the academic year. The session lasts three hours, including a didactic portion, a hands-on session, a tour of the OR, and a time for socializing and networking among the families and with residency leadership. The didactic session will cover general information about the field of Anesthesiology and related subspecialties, describe typical interactions and challenges in the day of an Anesthesiology resident, and cover the equipment used by Anesthesiologists on a daily basis. The Hands-On session will allow family members to gain personal experience with some of the equipment used by Anesthesiologists, as well as provide a fun atmosphere for children. The tour of the OR will expose the family members to the sights and sounds of the regular working environment of their resident, and to appreciate the stress of working under those conditions. There will be an additional discussion afterwards regarding signs of stress and burnout and the signs of substance abuse, as well as a discussion of Anesthesiology within the military and typical post-residency assignments. Finally, there will be time for the families to socialize and interact with each other, and to meet the residency program leadership.

Evaluation Plan: Of the 17 residents who could potentially participate, 6 chose to attend and bring their families. There were 18 total attendees, with 6 residents, 6 spouses and 6 children (ages 4-10). Overall satisfaction with the Family Day was gauged with a customer satisfaction survey that was distributed and collected at the end of the day. The increased ability to communicate and empathize was measured with a pre- and post- Family Day Questionnaire, both of which were conducted on the day of the event, to gauge current level of communication and whether attendees felt the event improved their ability to communicate. Resident interviews two weeks after the event, conducted on a Resident Education day, will be used to gauge longer term changes in empathy, attitude and ability to communicate between residents and spouses, and to attempt to gauge impact on resident well-being and resiliency.

Potential Impact: Implementation of a Family Day event has the potential to improve resident well-being and resiliency, and improve family satisfaction with the residency program.

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BOLDly Addressing Border Health Needs in Obstetrics & Gynecology Residency

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Idea: We developed a dedicated residency track in obstetrics and gynecology to address women's border health needs, the first of its kind nationally.

Need: In 2017, the American College of Obstetricians and Gynecologists hosted the first National Summit on Women's Health to identify challenges in OBGYN residency education and propose solutions. Stakeholders concluded that, despite numerous transformations in the specialty over the past 50 years, residency education has not significantly changed. Participants advised reassessment of current residency training structure, increased flexibility of training content, and acknowledgement that OBGYNs must be able to offer basic primary ambulatory medical care, particularly in rural, underserved, and low-income communities. Several innovative residency programs and tracks address training in the context of specific population needs. However, these programs have focused on the traditional primary care specialties of family medicine, internal medicine, and pediatrics. Similar innovations in surgical residency programs have been limited to pre-fellowship and rural tracks, with OBGYN having one rural track, started in 2017 at the University of Wisconsin. The University of Texas Rio Grande Valley (UTRGV) enrolled its first class of residents in 2015 and its first class of community-based medical students in 2016, with a mission of serving the unique health needs of its 1.3-2 million border population. To address our community's need for specialty leaders in women's border health, we designed a dedicated comprehensive 4-year training track.

Methods: We reached out to key stakeholders in our community, university, hospital, and professional organizations to create a curricular foundation to meet the track's mission. We determined that clinical focus areas should address: diabetes, hypertension, obesity, mental health, substance use disorders, preventive healthcare, and infectious disease, as well as complex ambulatory OBGYN and office procedures. Areas of non-clinical focus should address: public health, quality improvement, interprofessional collaboration, leadership & management, healthcare policy, and disparities. Stakeholders also identified the importance of longitudinal experiences in community-based clinics and public health. We received a complement increase from the ACGME specifically for this track and will begin recruitment for the first track resident to begin 2020-2021. We will conduct formal key informant interviews with: university leadership, school of medicine leadership, university clinic practice plan leadership, primary hospital training site leadership, community health agencies, local community clinic leadership, professional organizations, community leadership, and innovative GME programs nationally to assist in curriculum development, prioritization, and planning. We will use semi-structured interview guides tailored to stakeholder type and perform content analysis to identify themes related to women's border health needs and ideal training content and strategies.

Evaluation Plan: Our evaluation measures for the program development stage include: completion and analysis of key informant interviews, ability to plan track curricula according to key informant interview findings, ability to obtain outside funding for specific curricular needs, development of detailed clinical and non-clinical track curricula, and dissemination of the track curriculum. Post-implementation measures include: number of track applicants, ability to match qualified mission congruent applicants, additional patients served, completion and impact of track-associated quality improvement initiatives, number of graduating residents who assume leadership roles in the Rio Grande Valley and other underserved and border areas, graduate satisfaction with training, specialty board pass rates, and dissemination of track outcomes to allow program results to inform GME innovation at the institutional and national levels.

Potential Impact: This residency track will take a step toward addressing women's health needs in our community's underserved border population. It will serve as a pilot that may extend to other university residency programs and may help inform GME reform on a national level.

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Increasing Provider Advocacy Education and Engagement: The Advocacy Spotlight Series

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Idea: Development of an advocacy spotlight series to educate health care providers on timely topics and increase their engagement with advocacy activities.

Need: Advocacy is increasingly recognized in the field of pediatrics as not only integral to our work in caring for children, but also as a key component of a pediatrician's career in academic medicine and lifelong learning [1]. Advocacy education has been progressively incorporated into pediatric training, and the Accreditation Council for Graduate Medical Education (ACGME) now requires that pediatric residency programs include experiences with “elements of community pediatrics and child advocacy” [2]. In addition, involvement in advocacy work has been shown to decrease physician burnout, and gives physicians a sense of purpose, promotes community building, and leads to greater job satisfaction [3]. However, although physicians and multidisciplinary providers may benefit from and desire to work in the realm of advocacy, the time constraints of busy clinical practices and lack of knowledge of frequent policy changes may limit one’s ability to become involved. A recent needs assessment done at our institution showed that pediatric providers are currently less engaged in advocacy than they have been in the past or would like to be in the future, including in the domain of advocacy teaching and mentorship. Lack of time and knowledge of available opportunities were commonly cited barriers to participation. Provision of easily accessible advocacy opportunities for provider education and engagement may help to meet this identified need.

Methods: The Advocacy Spotlight Series framework was developed to increase provider knowledge and offer direct opportunities for engagement with a salient and timely advocacy issue. The Advocacy Spotlight Series will occur every quarter of the academic year, or more frequently if new, urgent advocacy issues emerge. It will be open to all providers at Children’s Hospital Los Angeles, including medical students, pediatric trainees, attending physicians, and multidisciplinary staff. Each event will occur over a one-week period, beginning with a provider education symposium where guest speakers will educate multidisciplinary providers on the targeted advocacy issue. Throughout the week, a table will be staffed in one of the hospital’s main areas, which will have an easily accessible advocacy activity for providers. Examples of activities include laptops and templates available for public comments on proposed rules, a social media station, and provider fact sheets for counseling patients and families. The first Advocacy Spotlight Series event will occur in October 2019 and will discuss immigration policy and the new public charge rule. Attendees will be asked to complete an evaluation of the week’s events to help guide further interventions. The main outcome measure will be increased provider engagement, which will be measured by event attendance, as well as self-reported intention to engage further in advocacy initiatives via an evaluation survey.

Evaluation Plan: Evaluation of the Advocacy Spotlight Series will occur via an optional survey for attendees, as well as recording attendance at the provider education symposium and tabling events. The survey will include questions detailing: whether attendees found the symposium and activity applicable and educational to their clinical practice; whether the activities will change their behavior and comfort with discussing the target issue with patients; and if participation in the symposium and tabling events will change their behavior and interest in future advocacy engagement. Free text spaces will be available to identify barriers to participation and ideas for future target issues. Attendance at the tabling sessions will also be recorded to indicate completion of the target action item. Evaluation and attendance data will be reviewed prior to planning the subsequent Advocacy Spotlight Series event to allow necessary changes to be implemented in a timely manner.

Potential Impact: As the domain of advocacy becomes more prevalent in trainee and multidisciplinary continuing education, we hope our Advocacy Spotlight Series framework for provider education and engagement can be replicated at other institutions, increasing the impact of our interventions.

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Implementation and Evaluation of the Checkup Checklist App: Engaging Patients in Preventive Care

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Idea: We are developing a mobile and web application to promote patient engagement and increase utilization for preventive medical services.

Need: 21.7 hours. That's the time that, by one estimate, primary care physicians would need to dedicate every day of the year to their practice in order to ensure that their patients receive all recommended preventive services and disease management [1]. It's no surprise then that screening rates for diseases such as cancer remain low relative to goals set by the U.S. Department of Health and Human Services [2]. This unmet healthcare need presents a severe challenge to the nation's primary care providers and creative methods of addressing this gap in care must be sought. Fortunately, patient engagement has emerged in recent years as a potential route towards enhancing quality of care [3]. With this in mind, we have developed a mobile application ("App") to help engage patients in their preventive medical care. Our initial prototype, the Check Up Checklist App, is intended for patients scheduled for an annual wellness visit with their primary care physician. After downloading the App for free, users will enter key demographic and health information (e.g., age, gender, tobacco use). Based on user responses, the App will provide a summary of recommended tests and services (e.g., cancer screening, vaccines). The patient will then be prepared to engage more meaningfully in discussions about these services at their next medical visit. In total, the App is intended to take 15 minutes to complete and all recommendations are based on guidelines from the U.S. Preventive Services Task Force.

Methods: We have partnered with the USC Keck Health System in order to distribute our App to their patient base. The App will be advertised in primary care clinic waiting rooms and offices and will also be promoted through electronic communications between the health system and its patients via regular email and patient portal messages. After distribution, we will conduct research to 1) assess qualitative data to further refine our App prototype; 2) analyze quantitative data regarding usage statistics within the App itself; and 3) monitor the effect of the App on breast, cervical, and colorectal cancer screening rates in the USC Keck Health System. To address the first aim, we will be conducting focus groups and interviews with around 250 volunteer participants, who will be offered gift cards and lunch in appreciation of their participation. To address the second aim, we will analyze data that is automatically collected within our own App. Lastly, in partnership with the USC Keck Health System we will monitor cancer screening rates amongst their patient base at different time points both pre- and post- App distribution.

Evaluation Plan: After focus group testing and patient interviews, we will better understand which aspects of the App patients found easy or difficult to use, as well as which aspects that they found confusing and still others that they found helpful. We will incorporate this qualitative data to drive further refinement of the App. Our App's own internal data will allow us to analyze important items such as the average time spent using the App, percentage of users completing the entire preventive care module, percentage of users following up for screening tests, and rates of discontinuation for the App as a whole. Finally, we will be able to correlate the timing of distribution of the App with any increases or decreases in cancer screening rates within the USC Keck Health System.

Potential Impact: The U.S. healthcare system faces critical challenges in primary care in the coming years. Our Check Up Checklist App may represent a useful and cost-effective tool in addressing this crisis by increasing patient engagement in their own preventive care.

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The Downstate of Mind Blog: an Avenue for Humanistic Reflection and Expression

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Idea: A medical education blog as a forum for critical reflection through the humanities and art in order to develop medical student narrative competence.

Need: Narrative competence enables the physician to practice medicine with empathy, reflection, professionalism, and trustworthiness – such medicine has been aptly named narrative medicine [1]. Creative outlets such as reflective writing, art, or poetry offer learners the opportunity to develop the competence needed to absorb, interpret, and respond to the stories of human beings, which lie at the center of the practice of medicine. Unfortunately, the humanities are often not taught within the formal medical curriculum. If narrative medicine is taught at all, it is usually within structured courses or electives [2]. However, the current generation of learners prefer expressing themselves through social media such as blogs [3]. While integrating humanities into medical education is a challenge, we believe that we can take a small step by including a creative section in a medical student-driven educational blog. We aim to provide a collaborative and convenient space for students to explore medicine outside a purely scientific framework.

Methods: The Downstate of Mind website is a medical education blog run by medical students for medical students with faculty mentorship. The team of medical students and faculty have identified five critical aspects of medical education as the focus of the blog: 1) integrating medical knowledge and the clinical sciences, 2) sharing the direct clinical experience of students and faculty, 3) reflecting creatively on what it means to be part of the medical community, 4) exploring medicine in today's media, and 5) providing advice from experts in various medical fields. The blog content is organized into body system themes that align with SUNY Downstate's foundational curriculum. With respect to focus #3, the team is actively recruiting student submissions both locally as well as through calls on social media that address humanistic and artistic dimensions of each month's theme (e.g., the cardiovascular system), with the incentive of publication on the blog. The creative section is also open to reflective pieces on broader themes in student development. Because the blog is faculty-mentored, if a difficult topic arises (e.g., dealing with death and dying), there will be an open forum for discussion with students. By submitting to the blog, medical students will deepen their understanding of organ systems and the illnesses manifested in each, grasp and honor the meaning of human suffering, and build new and more complex perspectives towards the education and practice of medicine.

Evaluation Plan: Student participants will be asked to complete a survey to identify their previous experiences with art, motivation for participation, and their thoughts, feelings, and insights regarding the process of creating and publishing their artwork on the blog. Student participants, readers and commenters will be asked if the objectives were achieved using the Likert scale. Students will also be asked to report their experience with the blog format, and to comment on future recommendations for and attitudes towards incorporating humanities and art into medical education.

Potential Impact: The blog, which is available to all, will provide medical students an outlet to share unique experiences locally, nationally, and internationally. Critical reflection through the humanities and arts will augment medical students' understanding of patient narratives, as well as their own.

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The Military Academic Enrichment Elective: Improving Veteran Healthcare One Student At a Time

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Idea: A medical education course designed to educate future medical professionals on the challenges veterans face before, during, and after military service.

Need: The Joining Forces Initiative (JFI) indicated a national need for increased awareness and education surrounding veteran healthcare. The National Board of Medical Examiners (NBME) has recognized and addressed this need by including veteran health related questions on board exams [1]; subsequently, the Medical College of Wisconsin (MCW) acknowledged and signed on to the JFI [2], which inspired a student and faculty pair to create the Military Academic Enrichment Elective (M. Hayes, personal communication, September 2018). Therefore, the Military Academic Enrichment Elective (MAEE) was developed to prepare students for success both in board examinations and during future encounters with military and veteran patients as well as their families. The goal of the MAEE course structure was to promote positive attitudes and awareness of veteran culture and to increase knowledge of learners to improve future healthcare interactions. The curriculum was developed to include both didactic and interactive components, juxtaposing experience- and knowledge-based lectures with panels and discussions with actual veterans and current service members.

Methods: The 7-week MAEE course was offered to first- and second-year medical students, including a student who live-streamed from a regional campus. It included weekly 2-hour sessions with didactic enhanced by panel of veterans. The course was designed and led by healthcare professionals with prior military service. One interactive session included personal insights from current service members and veterans as well as hands-on exploration of military equipment utilized by active duty service members when outside of a hospital or clinic environment. Some of this equipment included heavy body armor, ruck sacks, and weapons that may have influenced back or joint pain in veterans as well as medical equipment utilized by field medics and physicians while deployed. Throughout the course veterans from different conflict eras and military branches shared their military service experiences, how they felt their personal well being and healthcare was impacted by their service, and what they wished to see differently in how veteran healthcare is approached. At each session, students completed a pre-test to determine baseline knowledge of the subject material and an identical post-test to measure knowledge gained. At the end of the course, a comprehensive final exam was administered to determine whether students retained the information given throughout the course. An attitudes assessment was delivered prior to the start of the course and again at the conclusion of the course.

Evaluation Plan: A key indicator for class success was student self-assessed confidence in working with the veteran population; an increase in overall confidence was found at completion of the course. Content quizzes demonstrated a knowledge increase in 100% of students. Course evaluations indicated instructional methods could be improved to scaffold the taxonomy of learning during the next course iteration and encouraged expanded perspectives from niche veteran groups such as women veterans and families of deployed personnel.

Potential Impact: Data collected during the pilot course was used to improve course delivery, further expand to regional campuses, and develop an inter-professional setting for the next iteration. Course capacity was increased for the next iteration to reach more students who will work with veterans in their future.

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3) Personal communication

Focus Groups for Medical Education Evaluation and Research

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Workshop Description: Focus Groups are a useful tool for educational program development. But there are lots of factors to consider. How should you come up with questions? What do you attune to while taking notes? And how do you manage multiple personalities at the same time? In this hands-on workshop, attendees will assume the roles of moderator, note taker, or participant to conduct focus groups about their experiences at the IME conference. Through first-hand exposure, participants will develop an understanding of the techniques of questioning, probing, managing group dynamics, and the types of data that result from the focus group experience.

Rationale: Focus groups are a popular qualitative methodology. But not everyone understands what goes into conducting an effective focus group. This workshop will simplify the process of conducting a focus group.

Learner Outcome Objectives: By the end of the workshop participants will be able to effectively
1) Develop a robust focus group protocol to target your research or evaluation question
2) Ask effective focus group questions by implementing probing techniques
3) manage group dynamics to facilitate a balanced discussion.

Intended Participants: Anyone interested in exploring focus groups as a research methodology.

Methods: Experiential learning of qualitative research methodology. Small-group exercise with debriefing.

Activity Timeline:
5-minutes – Introduction
5-minutes – Focus Group Background Information
5-minutes – Q&A Question Generation
10-minutes – Focus Group Researcher Roles
5-minutes – Next Steps for Focus Groups
45 Minutes – Small-group Focus Group Exercise
15 Minutes – Group Debrief

Take Home Tools: Focus Group question generating rubric

Balint Group Process: Reflecting on the Provider-Patient Relationship to Improve Wellness

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Workshop Description: Balint groups help trainees understand and approach the provider-patient relationship as a therapeutic tool, provide insight, imagine the motivations, and enhance communication in the relationship. The Balint method enhances empathy and reflective practice. This workshop will provide a didactic session and an interactive Balint group experience. Time will be provided to discuss group process, leadership, and the practical aspects of starting and maintaining Balint groups.

Rationale: The art of medicine has at its root the relationship between doctor and patient. Teams of professional providers from multiple disciplines contribute to the relationship in diverse healthcare settings. With increasing time pressures, competing priorities, and a “customer satisfaction” focus, the artful pursuit of empathic relationships in medicine faces significant challenges. Provider stress, burnout, and job dissatisfaction are on the rise. Given this environment, activities that enhance our ability to share our burdens with our colleagues and provide tools to help improve our understanding of the doctor patient relationship are of significant value to build resiliency in our learners as they seek maintain a sense of wellness.

Learner Outcome Objectives:
1) Define the purpose, essential elements, and outcomes of Balint groups.
2) Delineate how Balint groups contribute to improve communication skills in healthcare.
3) Demonstrate leadership skills particular to Balint groups.
4) Describe ways to start and maintain a group in medical school, residency, and interdisciplinary healthcare provider settings.

Intended Participants: Participants include any attendees who are interested in learning about the Balint group method and may range from the Balint-naïve to experienced faculty and learners with established leadership skills. Participants will learn the Balint method primarily through direct experience.

Methods: This 90-minute workshop is an introduction to the Balint method, a reflective and structured approach for reflecting on the provider-patient relationship. We will facilitate a Balint group in a “fish-bowl” format where volunteers will participate as members of the group and the remaining audience will actively listen and observe the group, noting the participant and leader interactions and behaviors.

Activity Timeline:
25 minutes - Introduction to Balint, purpose, elements, and anticipated outcomes of Balint groups
50 minutes - Actual Balint group in a “fish-bowl” format, led by American Balint Society trained leaders
15 minutes - Discussion of group process and leadership issues, logistics of implementing Balint groups in local environments

Take Home Tools: Introduction to Balint PowerPoint ACGME Competencies Addressed by Balint Groups Balint Group Definition and User’s Guide.

Teach Your Learners How to Ace Their Interviews by Projecting a Growth Mindset

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Workshop Description: Some programs offer mock interview sessions along with tips to help learners prepare for their interviews. The purpose of this workshop is provide a guide for using interview season as an time for you guide your learners to develop and practice a growth mindset. In doing so, you can teach your learners the secret to approaching their interviews with confidence, and a way to accomplish their interviews with grace and ease.

Rationale: Healthcare professionals and students punctuate their professional careers applying for positions that include high stakes interviews. According to the American Medical Association, the average medical student attends more than twelve interviews when applying for residency, and the average resident applying for a fellowship goes to between eight and twelve interviews. After clinical training, healthcare professionals continue to apply for positions that may hinge on the outcome of an interview. Preparation for these interviews is often informal, cursory, or even non-existent: "Just be yourself. Be honest. You'll do great." Some programs offer mock interview sessions along with tips to help learners prepare for their interviews. The purpose of this workshop is provide a framework for using interview season as a time for you guide your learners to develop and practice a growth mindset. In doing so, you can teach your learners the secret to approaching their interviews with confidence, and how to accomplish their interviews with grace and ease. The workshop will give mentors and coaches tools to guide their learners how to 1) Make a great first impression (it's over in a second). 2) Change "tell me about you" into a compelling 30 second elevator pitch. 3) Turn "what is your greatest weakness" into a memorable strength. 4) Project a "growth mindset" that will intrigue and delight an interviewer.

Learner Outcome Objectives: After participating in this workshop, participants will be able to:
1) Identify a single question that can predict success in an interviewee.
2) List 3 ways that an answer to the dreaded "what's your greatest weakness" question can demonstrate a capacity for self-reflection and a growth mindset.
3) Demonstrate ways that an interviewee can be empathic during an interview.
4) Use performance based interviewing questions as a framework to help your learners reflect on their own professional formation in preparation for an interview.
5) Plan a longitudinal educational experience using these workshop materials to challenge your learners grow professionally and face their interviews with confidence.

Intended Participants: program directors, faculty members, mentors, coaches, and advisors.

Methods: Participants will be given an introduction on the interview activities. We will utilize Poll Everywhere to ask questions and participants will use SMS polling from their laptops or mobile devices to answer polls. Following the group polling, workshop facilitators will present a mini lecture and discuss strategies for applying principles of a "growth mindset" to interviews. Participants will try their hand at answering selected performance based interviewing questions. Participants will also be asked to pair up and practice answering some "trick questions." Workshop facilitators will explore ways that participants see themselves adapting workshop themes to their own academic setting. At the end, a workshop evaluation will take place.

Activity Timeline:
5-minute – Introduction
10-minute – Group Polling using Poll Everywhere – How did you prepare for your interview?
15-minute – Mini-lecture – interview strategies
25-minute – Small group activity
20-minute – Practice interviewing
10-minute – Commitment to action
5-minute – Workshop evaluation

Take Home Tools: Annotated bibliography List of “trick questions” that are designed to promote self-reflection, list of performance-based interviewing questions adapted for a healthcare setting, checklist for a successful e-interview, slide set and handouts.

Personal Sustainability Practice – Integrating Practical Wellness into the Preclinical Curriculum

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Idea: A novel lifestyle practice curriculum where medical students in a preclinical course apply knowledge of basic science to self-care practices.

Need: Physician burnout has wide-ranging negative impacts on the healthcare community, including increasing rates of physician suicide and an estimated loss of $4.6 billion a year in physician income [1]. Signs of burnout begin in medical school, specifically in the preclinical years of medical education, and correlate to a perceived lack of control and autonomy in students' daily schedule [2]. However, wellness programs designed to address these issues exist as separate from the didactic curriculum itself, often requiring extracurricular time and effort on the part of students to participate [3]. Therefore, we have created lifestyle practice curriculum that integrates with weekly in-person small group sessions and allows students to apply their knowledge of basic science systems to self-care practices.

Methods: The Personal Sustainability Practice (PSP) curriculum will be a component of the preclinical medical student course Mind and Motion. The PSP curriculum will contain nine topics: Recognizing Impairment, Social Support Systems, Sensory Awareness, Mindfulness Practices, Sleep Hygiene, Benefits of Exercise, Work-Life Balance, Gratitude Practices, and Animal Therapy. Each of these topics will be integrated into group learning exercises, including case-based learning and team-based learning, which occur weekly within the course. Students will work together to apply their understanding of physiological systems (IE: the serotonergic neurotransmitter system) to explain the effects of engagement in self-care practices (IE: working through how positive social relationships confer resiliency against stress-induced changes in serotonin signaling at a systems level).

Evaluation Plan: We will evaluate comprehension of the didactic content from the sessions through a weekly multiple choice quiz question. Signs of burnout will be assessed at the beginning and end of the course through the Maslach Burnout Inventory General Survey. Student perceptions of the curriculum, including utility and satisfaction in presentation of the material, will be evaluated through a post-course assessment including free-text narrative comments. Finally, use of the practices from the curriculum and signs of burnout will be evaluated through a questionnaire to students at the beginning of each of their four major clinical rotation blocks over the next year.

Potential Impact: Integration and subsequent longitudinal evaluation of lifestyle practices content into the preclinical curriculum will create a new avenue by which institutions can reduce the prevalence of burnout in medical students.

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1) Han S, Shanafelt TD, Sinsky CA, et al. Estimating the Attributable Cost of Physician Burnout in the United States. Ann Intern Med. 2019 May 28;170(11):784–790.
2) Mazurkiewicz R, Korenstein D, Fallar R, Ripp J. The prevalence and correlations of medical student burnout in the pre-clinical years: a cross-sectional study. Psychol Health Med. 2012;17(2):188-95.
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Promoting Professional Identity Formation in PGY-1 Residents through Self-Reflection and Mentoring

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Idea: Fostering professional identity formation of incoming PGY-1 residents through structured self-assessment, reflection and mentoring.

Need: Current curricular models that focus on the ACGME core competency of professionalism have failed to integrate the process of professional identity formation [1]. The 2010 Carnegie report (Cooke et al., 2010) stressed the importance of professional identity and emphasized amongst its four recommendations the need for increased "focus on professional identity formation." This focus is particularly important at points of transition. Colbert-Getz et al in their 2016 model noted three factors that can influence transition, including personal characteristics, task readiness and contextual factors (learning environment) [2]. The proposed curriculum will focus on personal characteristics and methods to enhance the "landing pad" or learning environment for new residents. We will utilize the principles of transformative learning theory to promote growth in the residents through discussion and critical self-reflection [3]. This curriculum concentrates on building professional identity to promote the value and integration of professional characteristics, and enhance the residents' skills in self-monitoring and correcting their own individual behaviors.

Methods: The curriculum will focus on the incoming 27 PGY-1 residents from our four sponsored programs in Emergency Medicine, Internal Medicine, Obstetrics and Gynecology, and Psychiatry. The program will occur over the first 4 months of residency, utilizing monthly 2-hour in-classroom sessions and home assignments and will be led by the Designated Institutional Official (DIO) and the four program directors. The overall goal is for the residents to be able to articulate what factors are important in their professional careers and to develop skills in self-assessment, self-monitoring and self-correction. To accomplish this we will use a variety of methods: 1) The application of self-assessment tools (VIA Character Strengths Survey, Mindset Self-Assessment Tool, and Self-Compassion Scale); 2) Classroom teaching techniques (e.g., brainstorming, group discussion, debriefing, narrative writing, commitments to act); 3) Structured self-reflection on personally disconcerting events using the REFLECT Rubric (Wald et al, 2012); 4) Use of online resources to build background knowledge between sessions (e.g., TED Talks, articles); and 5) Mentoring by the DIO and program directors during the sessions and between. The residents will receive feedback from both their peers and instructors using a defined rubric.

Evaluation Plan: The evaluation will utilize multiple methods: 1) The preparation and delivery of the four classroom sessions will be tracked to identify deviations, along with noting attendance and completion of assignments by the residents; 2) Residents' reaction will be monitored during scheduled debriefings at the conclusion of each session and through standard session and end-of-course evaluation forms; 3) Learning will be assessed through review of narrative writing with the type and level of self-reflection reviewed by both peers and faculty using the REFLECT rubric; and 4) Resident application of learning will be evaluated through the use of individual end-of-program action plans including the use of self-assessment tools in monitoring and correcting professional behavior. In addition, scheduled follow-up meetings with program directors at six months from the completion of the program and subsequent semiannual evaluations will be performed to document further progress or need for remediation.

Potential Impact: Programs that address transitions are needed. If successful, this curriculum could be implemented within Graduate Medical Education (GME) programs nationally as well as within any other health profession that utilizes advanced clinical training.

References:

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Building Mindfulness Habits in Fourth Year Medical Students

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Idea: Utilizing an interactive multi-session curriculum to help fourth year medical students' development of mindfulness habits.

Need: Medical students are challenged with multiple stressors that can result in anxiety, depression, compromised self-esteem and mental health issues, which may contribute to burnout and diminish wellbeing [1]. Mindfulness training has been shown to reduces stress, burnout and reactivity, and to increase empathy, self-compassion, and attention in the moment [2]. Mindfulness training for health care students is not a standard offering in most medical school curricula. However, meditation innovations could feasibly improve wellbeing [3]. Many meditation apps are available and can be utilized to bolster medical student well-being. To meet this need, our idea is to develop a five-session mindfulness training curriculum for fourth year medical students to help smooth their transition to residency training.

Methods: This intervention is intended for 20 fourth-year medical students. The course goal is for the students to gain knowledge about mindfulness, build mindfulness skills, self-select mindfulness activities compatible with their personal lifestyle, and begin to incorporate mindful meditation practice into their daily schedule. The five one-hour sessions will utilize a variety of activities for students` including: 1) identification of personal stressors; 2) exploration of personal experience with momentary loss of attention 3) discussion of the research on benefits of meditation; 4) practice with multiple online apps for brief meditation, including body scan; 5) development of plans to incorporate brief meditation activities into daily routines; and 6) tracking progress with daily uses of mindfulness activities. The sessions are being developed to take advantage of active learning principles and will include brief formal presentations concurrent with use of brainstorming, small group discussion, self-reflection, practice with meditation techniques including online apps, and use of a mindfulness tracking tool.

Evaluation Plan: The evaluation will include the use of multiple data gathering techniques. 1) Tracking of delivery of the five sessions, session content and attendance; 2) Use of a standard session and course evaluation tool to gather information about learner ideas regarding: organization, teaching and chosen activities. 3) To track learning of the group we will collate brainstorming results on relevant topics, e.g., definition of mindfulness, mindfulness tools, barriers and supportive factors, regarding incorporation of mindfulness practices into daily life and explores the potential impacts of mindfulness training. 4) Use of a weekly written check-in to track mindfulness activities of participants between sessions. In the final session we will administer a standardized mindfulness self-report instrument (Kentucky Inventory of Mindfulness Skills – Baer et al, 2004) to examine where the learners are in their skill development.

Potential Impact: If this 5-hour longitudinal mindfulness curriculum is effective it could provide a model for other health professions' educators to utilize with their own learners. In addition, the meditation apps found to be useful could be used by any health professional.

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2) Rao N, Kemper KJ. Online Training in Specific Meditation Practices Improves Gratitude, Well-Being, Self-Compassion, and Confidence in Providing Compassionate Care Among Health Professionals. J Evid Based Complementary Altern Med. 2017;22(2):237-241.
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An Emotional Intelligence Curriculum to Help Ease Stress During Transition to Residency

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Idea: An interactive curriculum to build self-knowledge and emotional intelligence for PGY-1 residents to reduce stress during transition to residency.

Need: Transitions throughout medical education have been an area of interest for many years. Specifically, attention has been paid to easing the stress experienced during these transition phases. Colbert-Getz et al proposed that there are three main categories of concepts that aid in a successful transition: personal characteristics, task readiness, and contextual factors [1]. Previous studies have found burnout to be as high as 75% among PGY-1 residents and are affected by both organizational factors and personal characteristics [2]. It has been found that skills such as emotional intelligence are highly important to focus on to ensure a successful transition to residency [3]. Locally, our residents report feeling overwhelmed during the transition into residency and that they do not always have the best tools to cope with the challenges experienced during this time. With the goal of increasing self-knowledge and reducing residents' stress during transition to residency, we propose implementation and evaluation of a character development curriculum promoting the following aspects of emotional intelligence: mindfulness, self-compassion, and mindset.

Methods: This curriculum will be implemented with 12 PGY-1 emergency medicine residents spanning from the month prior to starting residency through the first month of residency. One month prior to starting residency, the incoming residents will be sent a self-assessment compiling evaluations of mindfulness (Baer et al), self-compassion (Neff et al), mindset (Dweck), burnout (single item MBI), and perceived stress (Cohen). They will also be asked to write a short self-reflection on a stressful situation they have experienced and how they dealt with that situation. During the initial orientation month of residency, the residents will attend three 60-minute small group sessions that address mindfulness, self-compassion, and mindset. These sessions will consist of short lectures on the topic with the majority of the session spent on discussion and reflection. These sessions will be facilitated by emergency medicine faculty knowledgeable in the topics and using expert material provided prior to the session. Each session will be accompanied by an independent learning assignment, such as a video, podcast, or app, related to the session topic. At the end of the month-long course, the residents will retake the self-assessment and complete a guided written self-reflection addressing how they have incorporated the topics into their professional lives since starting the course and how they plan to utilize them going forward. An additional assessment will be done five months after the curriculum.

Evaluation Plan: The evaluation will utilize multiple tools. 1) Tracking the implementation of this innovation will be done by direct observation during the sessions to record the number of participants and the content of the sessions. 2) Following the completion of the course, the residents will complete a standardized form to assess the curriculum (format, organization, content, teaching). 3) Additionally, we will utilize the reflection at the end of the course completed by each resident to evaluate the impact of the content on their lives. 4) We will also obtain data from the pre- and post- self-assessments by examining changes in each of the assessed scales. Qualitative data will also be obtained by reviewing the written self-reflections at the end of the course (describing the plan of action) and in a reflection completed during their six-month review where they discuss their actions to help them thrive (5 months after intervention).

Potential Impact: If successful, this curriculum would be an innovative introspective tool focusing on personal characteristics available to programs to help ease the transition to residency from medical school, which has previously been documented as a time of great stress and anxiety.

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A Peer Driven Curriculum for Wellness and Resilience in Medical Education

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Idea: A peer-led curriculum of evidence-based psychological interventions designed to improve medical student well-being and resilience.

Need: Compared to the general US population, at each level of training, physicians have more burn out, depression, and suicidal ideation. A recent study by Dyrbye et al. found a 28.8% prevalence of depression in a sample of 4255 residents. These numbers have huge implications for both patients and physicians. Studies show that low quality of life for doctors has been linked to worse patient safety. There is thus a great need across the country for better support of medical trainees and physicians. In the past, interventions sought to address this issue through tighter duty-hour restrictions, access to mental health facilities, and wellness activities. While these have proven to be helpful interventions, Slavin et al. found that some of the most beneficial modifications were those focused on changes at the curricular level. Subsequently, we created a nine session curriculum to address student issues of mental health and resilience. These sessions were designed off of evidence based approaches, proven to increase quality of life. Our hope is that in equipping medical practitioners with coping skills and support early in their careers, they will have lower rates of depression and burn out later in life.

Methods: The wellness curriculum was comprised of nine one-hour sessions administered to all first-year medical students at SUNY Downstate. Attendance at each session was mandatory per the office of academic affairs and lunch was provided by the office of the dean of the college of medicine. The first-year class was separated into groups of twelve to fourteen students each led by two second-year mentors who also provided emotional and academic support. The sessions were evenly spaced throughout the first six months of medical school and were designed as evidence-based psychological interventions, with each focused on a specific wellness topic. The organization of each session varied, but generally included a mentor introduction of the topic, self or group exploration activity, and group discussion. The overall intention of curriculum was to help incoming medical students develop strategies to maintain a healthy life balance, build resilience against stressful events, use criticism as a means of self-improvement, and limit stigma surrounding mental illness.

Evaluation Plan: To measure the efficacy of this wellness curriculum all first-year medical students at SUNY Downstate anonymously completed an IRB-approved survey during their medical school orientation and again six months later, after completion of the curriculum. This same survey was also administered to first year medical students at another SUNY school that did not have a peer-led wellness curriculum, which served as a control group. This survey assessed the students' depression, anxiety, and burnout using the PHQ-9, GAD-7, and Maslach Burnout Inventory respectively. Survey results found that while rates of depression in first year medical students were comparable between both schools at the initiation of their studies, medical students at SUNY Downstate experienced significantly less depression than the control students, whose rates were similar to the medical student national average. Downstate students also had decreased, albeit not statistically significant, rates of anxiety and burnout.

Potential Impact: Implementation of a peer-led wellness curriculum of evidence-based interventions may provide a cost-effective model to improve resilience and combat mental illness across all medical professions.

References:

1) Dyrbye, L. N., West, C. P., Satele, D., Boone, S., Tan, L., Sloan, J., & Shanafelt, T. D. (2014). Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. Academic Medicine: Journal of the Association of American Medical Colleges.

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Understanding And Overcoming Machine Learning Bias In Medicine

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Workshop Description: Machine learning (sometimes mistakenly called "artificial intelligence") is susceptible to unintended biases that require careful planning to avoid. Machine learning algorithms trained on biased data will simply amplify that bias, negatively impacting patient safety. We'll spend the first part of this workshop introducing the basics of machine learning in plain English and providing examples of how machine learning is rapidly being adopted in many industries, including medicine. We'll then turn our focus towards cognitive biases and how these may (accidentally?) be embedded into machine learning. Finally, you'll learn how to be a better consumer and judge of machine learning-generated results and recommendations.

Rationale: Both physicians and patients are seeing a growing number of media announcements for new, machine learning-enabled health care breakthroughs that promise to transform health care: "More cancers found! Fewer false positives! A better, cheaper way to provide quality healthcare." To be better consumers of these announcements, one needs to first understand what machine learning is and is not, how bias – such as missing data and patients not identified by algorithms, sample size and underestimation, and misclassification and measurement error – might (inadvertently) find its way into machine learning training datasets and the models they generate, why this is a problem (particularly in health care), and how to evaluate if a supposed machine learning-generated breakthrough is worth paying attention to.

Leaner Outcome Objectives: At the conclusion of this workshop, participants will be able to:
1. Explain what machine learning is
2. Describe how bias may find its way into machine learning datasets and why this is problematic (particularly in medicine)
3. Generate a list of questions to ask when evaluating the accuracy and applicability of the machine learning-generated recommendations and findings.

Intended Participants: This session is intended for health care professional educators and/or clinicians interested in a basic, introductory overview of both machine learning and machine learning bias.

Methods: This workshop will use a combination of short interactive didactic education with small group discussions and activities.

Activity Timeline:

00:00 – 00:05	Introduction and agenda
00:05 – 00:25	Didactic education on what machine learning is and how it works
00:25 – 00:40	Small group discussion about recent machine learning breakthroughs in the media
00:40 – 01:00	Didactic introduction to bias in machine learning
01:00 – 01:15	Small group discussion about identifying and potentially overcoming biased machine-learning recommendations and results
01:15 – 01:30	Wrap up, questions and discussion, and session evaluation

Illuminating Health Humanities in Undergraduate Medical Education through Curricular Mapping

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Workshop Description: Health humanities are increasingly being introduced in medical education, albeit often opportunistically in variable ways across years and courses. Curriculum mapping provides a means for making curricular themes visible by inventorying learning opportunities available in educational programs. In this workshop we describe a systematic approach to mapping and characterizing health humanities offerings with a view to developing and enhancing opportunities for significant learning in this domain.

Rationale: Integration of arts and humanities in the biosciences and related fields has been associated with a wide variety of positive learning outcomes, e.g. content mastery, critical thinking, enhanced visuospatial and communication skills, ability to work on teams, enjoyment of learning, etc. (see NASEM, 2018; AAMC's 2017 "humanities and arts foundations for medicine" initiative). Health humanities are increasingly being introduced in medical education, albeit often opportunistically in variable ways across years and courses. Curriculum mapping provides a means for making curricular themes visible by inventorying learning opportunities available in educational programs. Curriculum mapping offers a helpful foundation for informed curriculum planning. In this workshop we describe a systematic approach to mapping and characterizing health humanities offerings with a view to promoting opportunities for significant learning outcomes in this domain. Informed by "fuzzy logic" set theory, we created a working definition for health humanities (what is/ what is not). We also developed criteria to characterize the depth, complexity, and potential impact of health humanities content and approaches in relation to transforming perception, understanding, and sense of personal/ professional identity. We incorporated the notion of "threshold concepts" (Meyer, Land and Baillie, 2010) to help characterize the extent to which different curricular offerings might enhance critical awareness, deepen understanding, and foster transformative self-reconfiguring.

Learner Outcome Objectives: Participants will:
1) be able to apply a "threshold concepts"-informed curriculum mapping approach to visualizing and developing "actionable" insights into learner experiences of health humanities curricula, and
2) understand and appreciate the use of curriculum mapping offers as a platform for curriculum planning.

Intended Participants: Educators interested in health humanities, and/ or curriculum mapping and planning in health professions education (all levels).

Methods: Short didactic presentation, followed by an interactive exercise, small group discussion, and finally, large group debriefing.

Activity Timeline: We will begin with introductions, followed by a short presentation about our multi-component, curriculum mapping approach; sample maps will be presented for illustration. Using our mapping template, participants will work together in small groups and code health humanities curricula they are familiar with (alternatively, fictionalized curricular content will be provided). Completed maps will be collectively considered by participants. Large group discussion will consider: A) benefits of mapping as a precursor to envisioning, planning and introducing further health humanities curricular enhancements (i.e., identifying gaps, assessing the fit between instructional methods, and hoped for learning outcomes, , etc.), and also B) opportunities for improving our unique health humanities curriculum mapping approach.

Take Home Tools: Handouts outlining our health humanities curriculum mapping approach will be provided to participants.

Taking the V.I.T.A.L.S. to Interrupt Microaggressions

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Workshop Description: Negative implicit biases and stereotypes contribute to adverse health outcomes. Microaggressions are often a pervasive occurrence in health care settings that perpetuate negative stigmas about patients and colleagues. These subtle but offensive actions pose challenges for the recipients and the bystanders who witness them. This workshop provides information for using a rubric (V.I.T.A.L.S.) to identify, process, and address microaggressions that health care professionals may encounter.

Rationale: Physicians are expected to provide holistic, compassionate and culturally-attuned patient care to optimize outcomes and promote health equity. Recent efforts aimed at improving delivery of health care and achieving health equity have strongly emphasized the acquisition of cultural competency. This focus on cultural "competency" has elicited significant criticism for its inadequacy in improving biased attitudes and behaviors. In response, scholars have begun to shift away from the passive acquisition of presumed cultural competence. There are more efforts to promote cultural curiosity and ongoing acquisition of cultural intelligence. Rather than changing attitudes, interventions that allow for changes in behavior through structured teaching and instruction may help promote more respectful and inclusive environments for learning and healing.

Learner Outcome Objectives:
1) Identify common examples of microaggressions.
2) Intervene with specific tools to mitigate instances of microaggressions.
3) Improve advocacy efforts towards a more inclusive environment

Intended Participants: Teachers, Clinicians, Medical Education Staff personnel and all those interested in promoting an inclusive clinical and medical education learning environment

Methods: We will be implementing experiential exercises, small and large group discussions, short didactics and videos. We plan to follow up the participants after six months to provide support if needed.

Activity Timeline:
5-minutes – Introduction of facilitators
2-minutes – Slide: Objectives
10 minutes – Experiential exercises (Large and Small groups)
10 minutes – Facilitated discussion of recognizing microaggressions (Large group)
5 minutes – Video on microaggressions
10 minutes – Participants will be divided into small groups to discuss their experiences with microaggressions.
20 minutes – Presentation in the large group by each of the groups, with facilitated discussion
10 minutes – Didactic presentation on V.I.T.A.L.S. rubic
10 minutes – Case scenario for participants to practice
5 minutes – Video on empath

Presenters' Bios

Addams, Joel, MD
Dr. Joel Addams graduated from the University of Utah School of Medicine, with an additional internal medicine internship training in Utah as well. He is currently a chief resident in the anatomical and clinical pathology program at the University of Arizona/ Banner University Medical Center in Tucson, Arizona.

Ainger, Timothy, PhD
Dr. Timothy Ainger is a clinical neuropsychologist and an assistant professor of neurology with the UK College of Medicine and the Kentucky Neuroscience Institute. He earned his doctorate in Clinical Psychology from Gallaudet University in Washington, DC; his dissertation examined changes in executive functioning to individuals diagnosed with paranoid schizophrenia remanded to long-term inpatient hospitalization. He completed his clinical internship at the Hunter Holmes McGuire Veterans Affairs Medical and Polytrauma Rehabilitation Center in Richmond, VA, focusing on cognitive assessment and rehabilitation in veterans with multiple traumas and traumatic brain injuries. He completed his postdoctoral fellowship training in clinical neuropsychology with Cornerstone Neuropsychology (an affiliate of Wake Forest Baptist Health) in High Point, NC. He also spent three years working for the US Department of Justice. He focuses on applied neuropsychology, examining ways to enhance the clinical conceptualization of diverse populations and diagnoses. His clinical work and research foci include primary and secondary changes in executive functioning, epilepsy, kidney and liver transplant, multiple sclerosis, resiliency and wellness, multiculturalism, psychopathy, and forensics. He currently serves on the Neurology Department Wellness Committee and Diversity & Inclusion Committee, Graduate Medical Education Development Subcommittee, and the College of Medicine Faculty Wellness Committee.

Amedi, Alind, BA
Alind Amedi is a 2nd year medical student at the Keck School of Medicine of USC. He graduated from Harvard College in 2016 with a BA in psychology with a focus in cognitive neuroscience and evolutionary psychology. Before medical school he worked as a medical assistant in Iraq, a lead researcher for the development of Google Clips™, and finally as a research assistant at Beth Israel Deaconess Medical Center in Boston. His current areas of interest include medical education and patient engagement

Ananth, Mina, MD
Dr. Mina Ananth is a third-year medical family medicine resident at White Memorial Medical Center, East Los Angeles, California. She was born in Washington D.C and attended Princeton University, where she graduated with a BA in Anthropology. She then attended Tulane University School of Medicine for her MD and continued to earn a MPH from Tulane as well. Dr. Ananth is specifically interested in the social determinants of health and how such forces affect low income communities. She is fluent in English, Spanish, some Tamil and Hindi. She has lived and worked in many different places, most recently in rural Oaxaca, Mexico for a year, where she worked with the community to increase access to healthier food options. After residency, she hopes to complete a fellowship in Global Health Medicine so that she can continue to give back to her community.

Athyal,Vidush, MD
Dr. Athyal is the Behavioral Medicine faculty at Kaiser Permanente San Diego Family Medicine Residency. He has extensive training and experience as a graduate of both the University of Rochester Family Medicine Residency and Behavioral Medicine Fellowship. He has led and participated in Balint groups for over 10 years. He is passionate about spreading the Balint group process to other training programs. He has served as an American Balint Society Council member since 2017.

Awadallah, Nida S., MD
Dr. Nida Awadallah is a family physician at the University of Colorado School of Medicine (CUSOM). She works at the CU College of Nursing healthcare centers as a Physician Consultant and Primary Care Physician. Her medical practice centers on integrated health care and treating underserved populations. At the CUSOM, she works as a faculty specialist for clinical remediation of medical students, residents and fellows, where she helps learners from all backgrounds maximize their potential in their medical careers. Previously, Dr. Awadallah was the Associate Program Director and Director of Education at the CU Rose Family Medicine Residency Program. She is a graduate of the CU Rose Family Medicine Residency Program and Northeast Ohio Medical University. Outside of work, she enjoys spending time with her family traveling and exploring new places.

Bae, Whi-Inh (Shirley)
Whi-Inh Shirley Bae is a third-year medical student from David Geffen School of Medicine at UCLA, aspiring to become an emergency medicine physician. She is involved in research that focuses on designing a polished checklist geared towards medical students for providing care to critically ill patients. She works closely with emergency medicine physicians at VA Greater Los Angeles Healthcare System to study and evaluate VA institutional experience with minor blunt head trauma in anti-coagulated patients. Recently, her work also sought to analyze and curate FOAM resources for specific EM topics. Shirley is particularly interested in following the footsteps of her mentors and contributing to field of medical education.

Bahrainwala, Lulua, MD
Dr. Bahrainwala is the Chief resident at her Family Medicine residency program. She has a love for community medicine, advocacy and teaching. She intends to work as in academic medicine on curriculum development, teaching and making new community partnerships.

Baker, Matthew, MD
Matthew Baker is a PGY-2 pediatric resident at Children's Hospital Los Angeles. He graduated from Liberty University with a Bachelor of Science in Biology and received his Doctor of Medicine degree from George Washington University School of Medicine. His interests include medical education, innovation and technology in medicine, and business/finance in medicine. He plans to pursue a fellowship in Pediatric Critical Care following completion of residency.

Basrai, Zahri, MD
Zahir Basrai, MD is an Emergency Medicine Physician at the VA Greater Los Angeles Healthcare System. He is a Health Sciences Assistant Clinical Professor of Emergency Medicine at the David Geffen School of Medicine at UCLA. Dr. Basrai is also the creator of the narrative medicine website and podcast, the Physician Grind (physiciangrind.com) and the medical education website EMEd (https://blog.numose.com/emed).

Bat-Erdene, Uilst
Uilst Bat-Erdene is currently a fourth-year medical student at the University of Alberta. During her time studying Molecular Biology at the University of Calgary, she developed an interest in understanding people's drive for higher education. In addition to becoming a clinician, Uilst is hoping to pursue a career in medical education, especially focusing on helping students channel their personal interests and their drive for betterment of society.

Berjis, Amir, MD
Amir Berjis is a Director of Medical Education and Designated Institutional Official at Kern Medical Center in Bakersfield, CA. He also serves as the Director of Thoracic Surgery in the Department of Surgery. Dr. Berjis completed medical training at Saint Louis University School of Medicine prior to entering general surgery residency at Kern Medical Center. He pursued a second residency in cardiothoracic surgery at the Medical College of Wisconsin and further fellowship training in thoracic oncology at UCLA. Dr. Berjis was in private practice for 10 years prior to joining Kern Medical Center 5 years ago. He is a fellow of the American College of Surgeons and a Fellow of the American College of Chest Physicians.

Bernard, Heather, MD
Dr. Bernard was a former Chief Resident in Pediatrics at the Children's Hospital of Pittsburgh/University of Pittsburgh Medical Center and is now a General Academic Pediatrics Fellow at Boston Children's Hospital. She has an interest in optimizing graduate medical education and was a co-investigator in a pilot study of gamified board-review curriculum that occurred last year and has co-hosted multiple gamified review sessions.

Besinque, Kathleen, PharmD, MSEd
Kathleen (Kathy) Besinque is a Professor of Pharmacy at the Chapman University School of Pharmacy in Orange County California as the Director of Experiential Education. She is also an adjunct faculty member for the Keck School of Medicine where she teaches in the Master of Academic Medicine program in the area of faculty development for the health professions. Dr. Besinque is licensed as an Advance Practice Pharmacist in California and is recognized as a fellow by the American and California Societies of Health-System Pharmacists and the California Pharmacist Association. She is engaged in leadership and advocacy related to women's health and public health issues such as the access to contraception and the opioid crisis. Additionally, she has served in leadership roles for several organizations including: the California Pharmacists Association, AACP and the California Society for Health-system Pharmacists. Dr. Besinque's research interests include women's health care issues with a focus on access to contraceptive care, educational strategies to improve learning for pharmacy students and faculty/preceptors in the clinical setting. The goal of her research is to bring a better understanding of the value and the contribution of pharmacists to the women's healthcare services.

Bhatter, Param, BS
Param Bhatter is a third-year medical student at UC Irvine. After studying at UCSD, he worked in the biomedical engineering field prior to medical school. His research focus includes artificial intelligence, medical education, patient comprehension, and ophthalmology. At UC Irvine, he is involved as a peer mentor, Doctors for Diversity, education policy. He also works as a consultant for the startup, Centaur Diagnostics.

Bhavsar, Udit, BS
Udit Bhavsar is a second-year medical student at the University of Utah School of Medicine (UUSOM) interested in pursuing a career in academic medicine. He has been interested in research since his undergraduate training and has conducted clinical research in the field of Emergency Medicine. His research has focused on evaluating health literacy among patients that visit the emergency room at the University of Utah hospital. He is also involved in conducting research about evaluating the efficacy of the Students as Teachers pathway for medical students at UUSOM. Additionally, he is involved with research focusing on Professionalism and Diversity within the second-year class at UUSOM.

Birkman, Clair, MLIS
Clair Birkman is the research librarian for the IDEAS Office, in the University of Alberta's Faculty of Medicine & Dentistry. Having received her MLIS from UCLA, Ms. Birkman's background includes providing outreach and education through the National Library of Medicine's Regional Medical Library program. At UCSF, she served as Education Liaison to the School of Nursing and Social and Behavioral Sciences. She provided instruction and reference services to community health care providers through the Colorado Area Health Education Center (AHEC), at the University of Colorado Denver. She also teaches classes in literature searching skills and patient health information to health sciences students (medicine, nursing, and allied health), and participates in research with health sciences faculty.

Boland, William, MD
William Boland is a PGY-3 emergency medicine resident at Barnes Jewish Hospital/Washington University School of Medicine in St. Louis.

Boucharel, Adria, MD
Dr. Adria Boucharel is a pediatric anesthesiologist and clinician educator. Her primary administrative roles are Associate Director of Education for the Children's Hospital of Colorado (CHC) Department of Anesthesiology and Advisory College Program Faculty Advisor for the University of Colorado School of Medicine. During her years at CHC she has become increasingly involved in department and campus education related activities. She is a member of the department Education and Clinical Competence Committees. She interviews medical students for the Interview Subcommittee and serves as a voting member of the School of Medicine's Curriculum Steering Committee and Student Life Steering Committee. She is actively involved with ongoing curriculum reform efforts. Adria served as a faculty senator for two years, and as Secretary of the Faculty Senate for one year. She facilitates many small group sessions and yearlong courses for medical students, and other health professions students.

Bradham, Kari, DO
Kari Bradham is an Assistant Professor in the College of Medicine at the University of South Alabama in Mobile, Alabama. She received her medical degree from NOVA Southeastern University, Davie, Florida, and completed her pediatric training at Children's and Women's Hospital, Mobile, Alabama. She is a general outpatient Pediatrician who has interests in ADHD and complex care. She is currently a member of the Residency-Faculty Advisor Program, Institutional Review Board, and Clinical Competency Committee.

Brecha, Federica, BS
Federica Brecha is a 2nd-year medical student at the University of Utah School of Medicine (UUSOM) interested in becoming an academic physician. During her undergraduate training, she studied an endangered language in the Romance Language Program. She then joined Dr. Kay's laboratory, in the Department of Neurobiology School of Medicine at Duke University. There, she used mouse genetics and cell imaging to study astrocytic spatial patterning in retina neural circuit formation and the role of microglia in retinal development, which has important clinical implications in neurodevelopmental disorders. The findings of this study are now in publication in PLoS Biology. Federica's curiosity has continued to fuel her interest in research that can change the way people think and practice medicine. Over the last year, she has worked on a research project under the mentorship of Dr. Cohan, an academic colorectal surgeon whose research focuses on patient centered decision-making surrounding surgery. She is focusing on understanding what is important to patients when weighing the risk for surgical site infections and antibiotics side effects. She is very involved with research focusing on professionalism and diversity within the second-year class at UUSOM. As a co-leader of the Women Empowering Women in Leadership group at UUSOM, she studies the effectiveness of our programming in increasing mentorship opportunities for female-identifying people in medicine.

Brett-MacLean, Pamela, PhD
Pamela Brett-MacLean, PhD is an associate professor in the Department of Psychiatry and director of Arts & Humanities in Health & Medicine (uab.ca/ahhm) in the Faculty of Medicine & Dentistry at the University of Alberta. Recent publications include Keeping Reflection Fresh (2016) with Allan Peterkin, and Art+Medicine Collaborative Practice (2019) with Lianne McTavish. In 2018, she helped establish the Canadian Association for Health Humanities (www.cahh.ca). She completed her doctorate in interdisciplinary studies at the University of British Columbia. Email: pbrett@ualberta.ca.

Briggs, Amy, MD
Amy Briggs is a fourth-year emergency medicine resident at LAC + USC Medical Center in Los Angeles, CA. She graduated with a Bachelor of Arts from Pomona College in 2010 and received her MD from the Keck School of Medicine of USC in 2016. She is interested in systems improvements which can bolster resident wellness and wilderness medicine.

Brodsky, Leah, SB/AB
Leah is a graduate of the University of Chicago, where she completed a Fellowship in Human-Centered Design in Healthcare. She worked as a software consultant for the international consultancy

ThoughtWorks before joining her current team at the University of Illinois at Chicago Institute for Healthcare Delivery Design.

Butani, Lavjay, MD MACM
Dr. Butani is a professor of pediatrics and former pediatric clerkship director. He is the Vice Chair for Academic Affairs in the Department of Pediatrics and the Director of the Student Development in the Office of Medical Education, working with the Dean of Students to help students who are experiencing academic and professionalism challenges.

Caceres, Narciso, MD
Dr. Narciso Caceres is a third- year family medicine resident at White Memorial Medical Center, East Los Angeles/California. Dr. Caceres was born in Guatemala and attended UCLA, where he graduated with a B.S in Physiological Science and a Spanish minor. He then attended UCI for medical school where he was part of the PRIME-LC program which provides extra training to medical students so that they can provide quality medical care to our growing underserved communities. Dr. Caceres also completed an MBA from UCI in order to one day get involved in administrative duties while providing medical care to his patients. Mr. Caceres is fluent in both Spanish and English. After residency, he plans to give back to his community by practicing medicine in the underserved cities of Los Angeles.

Carlisle, Ryan, BS
Ryan Carlisle is a second-year medical student at the University of Utah School of Medicine. His research focuses on the epidemiology of dermatologic disease, the administrative burden of prior authorizations in medicine, and innovations in medical education. He is also a member of the American Medical Student Association.

Casey, Alex, DO
Dr. Casey is a first-year family medicine resident at Emanate Health located in West Covina, California. Alex was born in La Habra, CA, and grew up performing community service and working with underserved populations. After attending medical school in New York, Alex achieved his dream of moving back to Southern California to serve the local communities that he grew up in. He now enjoys working at multiple hospitals and FQHC health clinics in the San Gabriel Valley. He is interested in pursuing a fellowship in Sports Medicine and one day working for local high school and college sports teams.

Castillo, Odrin, DO, MPH
Odrin Castillo is a chief resident in his third year at the Long Beach Memorial Family Medicine residency program. He attended San Francisco State University for undergraduate studies and graduated from Touro University California in 2013 with a dual DO/MPH degree. After residency, he plans to stay on as faculty at his residency program, where he can continue to expand the LGBT curriculum that he, his co-residents, and his program director have been working diligently to develop. He is a member of the American Academy of Family Physicians, Association for Clinicians of the Underserved, and the Gay and Lesbian Medical Association. His professional interests include medical education, mentoring, community medicine, health equity, and LGBTQ medicine. Outside of the clinic, he loves the San Francisco Giants, the Golden State Warriors, a cappella music, musicals, board games, crossword puzzles, and Disneyland.

Castillo, Ronald, BS Biology, MD Candidate
Ronald Castillo is a second-year medical student at the Keck School of Medicine of USC, where he is also part of the Primary Care Program. As a medical student, he is one of the volunteers for the Keck Core and Strength Exercise Class at the Wellness Center. Ronald is a first-generation student and was born and raised in Boyle Heights. He graduated from UC Riverside in 2014 with a BS in Biology and completed Keck Graduate Institute Post-Baccalaureate Program in 2017.

Cerza, Dante, MD, MACM
Dante Cerza, MD, is an attending anesthesiologist in the Department of Anesthesiology and Critical Care Medicine at Children's Hospital of Philadelphia.

Chan, Doris, MD Candidate
Doris Chan, MD Candidate, Class of 2021, UNLV School of Medicine, Las Vegas, Nevada. She earned a BA in Molecular Cell Biology with a concentration in Infectious Disease from the University of California, Berkeley. Doris is currently an MD candidate at the UNLV School of Medicine in Las Vegas, Nevada, and is interested in pursuing a career in Obstetrics and Gynecology.

Charles, Amanda, BS
Amanda Charles is a third-year pharmacy student at the University of Texas at Austin, College of Pharmacy. She completed her BS in Pharmaceutical Chemistry at University of California, Davis. Her future career goals include completing a PGY1 and PGY2 residency to become a specialist in psychiatric pharmacy.

Chen-Joea, Cynthia, DO, MPH, CPH
Dr. Chen is a new family medicine faculty member at Emanate Health Family Medicine Residency. Her interests include public health, health policy, advocacy, maternal child health and procedures. She obtained her BS from UCLA with a major in Biology and minor in Developmental Psychology. She attended Western University of Health Sciences for medical school where she was the Council Chair of the Council of Healthcare Advocacy and Reform and was Co-President of LACMA chapter at her medical school. Prior to medical school, she was an early care and education teacher at UCLA. Dr. Chen received her Master's in Public Health from Drexel University and had experience in various institutions during that time in the Department of Public Health, the Mayor's Office, and the Center for Hunger-Free Communities. At Drexel, she was Co-Founder and President of the Drexel Chapter of HepBFree. Thanks to Dr. Chen's work in the community, Philadelphia received the Community Medicine Award in 2012. She is also a graduate of the Long Beach Memorial Family Medicine Residency Program, where she was the program's first resident to complete an area of concentration in Health Policy. Additionally, she completed a Health Policy fellowship at George Washington University, was Co-Chair of the Resident-Student Council at CAFP and served as Academic Chief during her residency. In her spare time, she loves to cook, eat, read novels, play with her pup Murphy, binge watch Netflix, and travel.

Chen, Hsuan-hsiu (Annie), MD
Dr. Chen is a third-year pediatric resident at Children's Hospital Los Angeles. She received her undergraduate degree in Neuroscience from the University of California, Los Angeles and her medical degree from the Keck School of Medicine of the University of Southern California. Her areas of interest include medical education and clinical communication skills. As a medical student, she served as a camp counselor for high school students interested in biology and medicine, piloted a mental health curriculum at inner-city middle schools, and taught gross anatomy to first- and second-year medical students. In residency, she has developed resident-focused curricula on addressing parental vaccine hesitancy and caring for patients with advanced care plans. Her curriculum on addressing parental vaccine hesitancy has been recognized and awarded for its contributions to resident education and child health advocacy. She plans on pursuing a fellowship in Hospice and Palliative Care after residency, while continuing to cultivate her skills as a teacher and mentor in academic medicine.

Chen, Liang, BS
Liang Chen, MD, CM candidate 2020, is a fourth-year medical student in the Faculty of Medicine, McGill University. He has an interest in medical education and curricular innovation. He has past experiences in medical education curricular planning as Past President and Executive President of the Medical Student Society of McGill University.

Chen, Scarlett, BS
Scarlett Chen is a fourth-year medical student at the University of California, San Diego School of Medicine. Prior to entering medical school, she received her Bachelor degree in Physiological Science from the University of California, Los Angeles. She also worked as an Emergency Department scribe, where she gained firsthand experience using the electronic health record as part of clinical practice. Her interest in education and teaching innovation came through her work with CityLab at UCLA, a

science outreach program geared toward high school students, and as a teaching assistant for several UCLA undergraduate courses. These experiences led her to pursue her current senior thesis project integrating interactive EHR training opportunities in the preclinical medical school curriculum without burdening students with additional classroom time.

Chin, Justin, BA
Justin Chin is a fourth-year medical student at TouroCOM New York. He received his BA from the University of California, Berkeley. He is the External Vice President for the Asian Pacific American Medical Student Association (APAMSA). His previous research is widely published and ranges from basic science to medical education.

Christman, Grant, MD, MACM
Grant is a pediatric hospitalist at Children's Hospital Los Angeles and Assistant Professor of Pediatrics at the Keck School of Medicine at the University of Southern California, and a graduate of the USC Master of Academic Medicine program. He serves at the Director of Education for the Division of Hospital Medicine at CHLA, and with a focus on faculty development, as well as overseeing all educational content delivered to trainees by the Division of Hospital Medicine. Additionally, he has won awards for excellence in mentorship of senior trainees for both research-related and career/life mentorship. gchristman@chla.usc.edu

Chu, Francis, MD, MPH, MPP
Dr. Chu is the Program Director at Kaiser Permanente San Jose Family Medicine Residency. He has been involved Family Medicine residency training for 20 years in a variety of capacities including faculty development, procedural training, obstetrics, inpatient and behavioral medicine. He has participated in Balint groups and training for the last 5 years, specifically focusing on the empathy that Balint groups cultivate in residents who participate in Balint groups. He currently serves on the American Balint Society Council, chairing the Events Committee.

Clifton, Maurice, MD, MSEd, MBA
Dr. Clifton received his undergraduate degree from Harvey Mudd College in Chemistry. He then joined the U.S. Peace Corps where he taught fresh-water fisheries for two years in Guatemala. He went to medical school at the University of Washington, and subsequently completed his internship and residency at Cedars Sinai Medical Center. After practicing primary care at a county clinic in Los Angeles, he completed a fellowship in Adolescent Medicine at Children's Hospital of Los Angeles. Moving to Pittsburgh after his fellowship, he completed a Master's degree in Medical Education at the University of Southern California. Using his MSEd degree, he was named Director of Student Advising in the Office of Student Affairs at the University of Pittsburgh School of Medicine, he was responsible for the advising program, and Director of the Advanced Clinical Education Center, where he developed the Standardized Patient Program. Dr. Clifton then transitioned to Associate Dean for Admissions and Student Affairs at Mercer University School of Medicine and was subsequently named Senior Associate Dean for Academic Affairs at the Commonwealth Medical College where he was responsible for the admissions, student affairs, and the curriculum. He obtained his most recent Master's degree at the Wharton School, where he attended the Executive MBA program and he currently is the Executive Dean at Saba University School of Medicine and Chief Academic Officer at St. Mathews University School of Medicine.

Cohen-Cutler, Sally, MD
Dr. Sally Cohen-Cutler is a third-year fellow in the Division of Hematology/Oncology and Blood and Marrow Transplantation at Children's Hospital Los Angeles (CHLA). She graduated from Columbia University with a BA in English, then earned her medical degree at University of Chicago Pritzker School of Medicine. She completed her pediatric residency at Johns Hopkins Hospital. Dr. Cohen-Cutler has interests in medical education, health outcomes and palliative care, and optimization of health services in the context of childhood cancer care. As chief fellow, she is committed to improving clinical and didactic education at CHLA. She has worked closely with the administration to create a new Hematology-Oncology fellowship orientation program and full educational curriculum. Dr. Cohen-Cutler is currently establishing an End of Life task force within the department, including proposals for

education, provider support, and practical patient care initiatives. Her educational work is synergistic with her research. She also serves as a PI of a study to optimize long-term follow-up care for patients who receive radiotherapy for cancer and am co-investigator of a study of outcomes in adolescent and young adult patients with colorectal cancer. Both studies involve impact measures of quality of life, patient distress, and cost of cancer. Her overarching mission is to improve the quality of life of childhood cancer patients, even if those lives are cut short. She is passionate about the education and well-being of those who provide that care.

Cohen, Rachel, MD
Rachel Cohen is a second-year resident at Children's Hospital Los Angeles. She received her BA in English Literature from the University of Pennsylvania in Philadelphia, PA, and her medical degree from Albert Einstein College of Medicine in the Bronx, New York. She is a participant in the Medical Education track of the CHLA residency. Additionally, she is a member of the ACGME Health Disparities QI Collaborative, the CHLA Residency Diversity and Inclusion committee, and the CHLA Advocacy Collaborative. Rachel is interested in medical education, reproductive justice, and using a structural understanding of disparities to increase equity in healthcare.

Collins, Molly, MD
Dr. Collins has been learning about and is committed to a career in palliative care since she was an undergraduate at the University of Pennsylvania. After attending Harvard Medical School, she completed her internship and residency in internal medicine and primary care at the Hospital of the University of Pennsylvania, where she co-developed and taught an outpatient palliative care curriculum for other residents. She completed her fellowship in the Harvard Interprofessional Palliative Care Program in 2016. Since then she has continued to pursue her passion as a medical educator promoting primary palliative care and training the next generation of palliative care specialists and leaders. In her current role as faculty at Fox Chase Cancer Center and Temple Health, she created and directs the Hospice and Palliative Medicine Fellowship. In addition, she serves as the Director of Medical Education of the Pain and Palliative Care Program, overseeing palliative care education for trainees and colleagues throughout Fox Chase Cancer Center.

Corey, Britney, MD, MACM
Dr. Corey is a fellowship-trained minimally invasive gastrointestinal surgeon, specializing in complex abdominal wall reconstruction and anti-reflux and foregut surgery. She completed her minimally invasive GI surgery fellowship and general surgery residency at UAB. She serves as the Surgery Clerkship Director at the University of Alabama at Birmingham, the Site Director for Surgery Education and the Assistant Chief of Surgery at the Birmingham VAMC. Her research interests center around improving undergraduate and graduate medical education. She is currently enrolled in the Master of Academic Medicine program at the Keck School of Medicine at the University of Southern California.

Cortez, Carla, DO
Dr. Carla Cortez is a first-year family medicine resident at Adventist Health White Memorial. She is originally from Las Vegas and received her undergraduate degree in Integrative Physiology at the University of Nevada Las Vegas. She also attended medical school at A.T. Still University School of Osteopathic Medicine in Arizona, where she had the opportunity to work in a federally qualified health center. Her interests include working with the underserved, maternal and child health, and patient advocacy.

Crispen, Patrick, EdD
Patrick Crispen is the Director of Educational Technology for the University of Southern California's (USC) Keck School of Medicine where he also holds a faculty appointment as an Assistant Professor of Clinical Medical Education. He is also an Assistant Professor (adjunct) in USC's Rossier School of Education where he teaches face-to-face and online masters- and doctoral-level education classes. Between 2009 and 2014, Crispen served as a manager in USC's Information Technology Services where he managed USC's enterprise-level learning management system and ancillary course technologies budgeting, staffing, and support services. Crispen has 25 years of experience in the field of educational technology and has assisted higher education institutions, K-12 schools and districts,

state departments of education, regional and national educational consortia, and corporations with the creation and deployment of effective academic technology methodology and curriculum. Crispen has also authored four titles for the lynda.com online training library and has co-authored two classroom technology textbooks. Crispen sat for a doctorate in educational leadership under Richard Clark at USC in 2010, a master's degree in educational technology (online) from Pepperdine University in 2001, and a bachelor's degree in economics from the University of Alabama in 1998.

Dadsetan, Malia, DO
Malia Dadsetan is currently a third-year family medicine resident at Adventist Health White Memorial. She received her degree in Biological Sciences from UC Davis, followed by her medical and public health degrees from Touro University. She's a proud Southern California native and strives to continue to help improve the health and well-being among the underserved communities that she works in.

Dakroub, Allie, MD
Allie is an Academic Clinician Educator Scholars Fellow and Clinical Instructor of Internal Medicine and Pediatrics at the University of Pittsburgh Medical Center. His research centers around alternative learning strategies and educational methods. He has conducted multiple studies on gamification in medical education and is currently conducting a follow-up study to qualify and quantify knowledge outcomes with gamified educational strategies.

De Gifis, Adrian, PhD
Adrian De Gifis, Ph. D. (Primary Investigator) is Director of Student Programs for Michigan State University College of Human Medicine's Southeast Michigan campus, developing and deploying humanities content in UME curricula.

Desai, Ruchi, BS
Ruchi Desai is a second-year medical student at University of California, Irvine School of Medicine (UCISOM). Before entering medical school, Ruchi received a BS in Molecular, Cell and Development Biology with a minor in Biomedical Research at UCLA. She is a founding member of UCISOM's Technology in Medicine group, a student-run group for collaborations in medical education, community service, and research projects that incorporate new and existing technologies.

Dhanani, Sofia, BA
Sofia Dhanani is a second-year medical student at the Keck School of Medicine of USC, pursuing a career in pediatric oncology. As a UC Berkeley alumna, with a BA in Cognitive Science, she has six years of neuroscience and neuro-oncology research experience, and a background in computational neuroscience. She was the co-founder and CEO of two medtech startups, focused on improving global health literacy and access to mental health services, respectively, prior to her brief career in healthcare and pharmaceutical consulting. She is currently conducting research at both the Keck School of Medicine studying medical student education, and at Children's Hospital Los Angeles studying pediatric brain tumors.

Dosman, Cara, MD
Cara F. Dosman, MD, FRCPC is a Developmental Pediatrician and Associate Professor at the University of Alberta and works at the Glenrose Rehabilitation Hospital, where she sees children for diagnosis and treatment of complex developmental-behavioural disorders. She is the team lead for developing and implementing a novel curriculum for training pediatric residents in developmental screening and anticipatory guidance (parenting strategies to promote child development) and has published several related clinical teaching tools.

Dunn, Victoria, MBBS
Vicky Dunn MBBS, Assistant Professor of Family Medicine, Keck School of Medicine of USC, and Primary Care Training Program Director, USC Student Health, is a British family physician (board certified in UK and USA), who after living, training and working in the north east of England for almost 40 years, moved to California in 2010. She spent an arduous journey relicensing, navigating getting a

job without redoing residency, and eventually becoming licensed and board certified. She enjoys teaching and mentoring at KSOM in the professionalism class, and the introduction to clinical medicine workshops. She helps the students interested in primary care find their place in medical school and navigate family residency application. In her clinical role, she supervises and precepts all medical students who rotate through student health, she also organizes staff and faculty development.

Dyer, Ashley, MD
Ashley Dyer was born and raised in Phoenix, Arizona. She attended St. George's University on the beautiful Caribbean island of Grenada for medical school, where she met her husband. She had the opportunity to complete clinical rotations in the UK and in multiple states around the US, which grew her passion to work with the underserved and global medicine. Dr. Dyer is currently in her 2nd year of resident in Scottsdale, Arizona. She participates in leadership roles, the wellness committee and group centering medical visits.

Edmonds, Victoria, BS
Victoria Edmonds is a medical student and member of the inaugural class of Mayo Clinic Alix School of Medicine in Arizona. She graduated from New York University, Abu Dhabi in 2015 with a degree in Biology. She has served on the medical school's Student Life and Wellness Committee for three years. The committee is comprised of faculty, administration, and students and is responsible for designing and implementing wellness programming for the school. She leads the student-initiated wellness activities initiative, which allows students to apply for funding from the committee for wellness-related activities and events of their own design. She developed this innovative educational research project with a classmate and fellow committee member in an effort to create clear avenues of feedback between students and faculty regarding experiences and expectations for wellness programming in medical school.

Elagandhala, Akshay, MD
Akshay Elagandhala is a Medical Education Fellow at the New York Presbyterian Queens Hospital. He recently completed his residency in Emergency Medicine at the University of Texas Health Sciences Center, at McGovern Medical School. His current job is two-pronged and involves clinical teaching as an attending physician in an academic Emergency Department as well as working with the medical student clerkship. He provides weekly lectures, bedside teaching, and twice weekly "teaching rounds" which includes a combination of chalk talks, bedside examination of patients in the ER, and procedural teaching. Dr. Elagandhala's additional professional interests include diversity and inclusion, wellness and adult learning theory. Outside of work he also has interests in wellness, constantly pursuing new ways to move, great food, and various forms of entertainment (movies, books, video games, huge anime and comic book nerd). His current fitness challenge is learning to do a muscle-up and a handstand pushup.

Elliott, Donna, MD, EdD
Donna D. Elliott, MD, EdD, is a Professor of Clinical Pediatrics, Educational Scholar, Vice Dean for Medical Education and Chair of the Department of Medical Education at the Keck School of Medicine of the University of Southern California. Dr. Elliott received her BS, MS, EdD and MD from the University of Southern California. Dr. Elliott has received numerous teaching and mentoring awards including the Mellon Award for Excellence in Mentoring and the Excellence in Teaching Award both from the University of Southern California. She was also named a Master Teacher at the Keck School of Medicine and elected a faculty fellow in the USC Center for Excellence in Teaching. Dr. Elliott received the Women Leaders in Medicine Award from the American Medical Student Association and was named a Remarkable Woman of USC. Dr. Elliott served as the Association of American Medical Colleges (AAMC) National Chair for the Group on Student Affairs (GSA). She is currently a member of the AAMC Advancing Holistic Review Initiative Advisory Committee, a member of the executive boards of both the National Board of Medical Examiners and the National Resident Match Program.

Enciso, Josephine, MD, MACM
Josephine M. Enciso, MD is an Associate Clinical Professor, Department of Pediatrics, Division of Neonatology and Developmental Biology, David Geffen School of Medicine at UCLA. She received

her MD at the University of Arizona College of Medicine, Tucson, AZ, in 1996, completed her residency in Pediatrics in 1999 at Tufts University School of Medicine/New England Medical Center-Floating Hospital for Children, Boston, MA, and completed a fellowship in Neonatal-Perinatal Medicine at Yale University School of Medicine/Yale-New Haven Hospital, New Haven, CT, in 2003. In November 2007, she joined the Division of Neonatology at David Geffen School of Medicine at UCLA and is the Program Director of the Neonatal-Perinatal Medicine fellowship at UCLA. Dr. Enciso received the USC Master of Academic Medicine degree in 2019.

Fakhoury, Mathew, DO
Mathew Fakhoury is a fourth year Urology Resident at Cook County Health and Hospital system in Chicago, Illinois. He was born and raised in Yonkers, New York and completed his undergraduate and medical school education in Long Island, New York. He spends as much time with his family as he can because they are what matter most in his life. He enjoys working out and hiking. Dr. Fakhoury hopes to one day have a men's health practice and ensure delivery of the highest quality of care to all of his patients while connecting with each of them.

Farhat, Ahmed, BS
Ahmed Farhat is a fourth-year medical student at the University of California, Irvine. His academic interests include medical education, ultrasound, and global health. He has conducted various studies, presented at international conferences, or published articles/abstracts in each of these areas. His goal is to improve the current state of medical education through the integration of technology, research, and innovation.

Faulkner, Christopher, PhD
Christopher Faulkner's background spans across four different universities with positions related to the field of medical education, instructional design, educational technology, curriculum development, and curriculum assessment. He has successfully been a part of numerous research projects with fellow faculty members, and designed activities with instructional technologies. In addition, he has taught both face-to-face and online courses in which these principles were employed. In his current role, he leads the implementation and oversees the effective use of our learning management system and other medical education technology within the Medical School curriculum. Christopher also mentors medical students interested in medical education and provides aid with research design and statistics. As a result of his current and past experiences, he is aware of the importance of properly assessing learners and investigating the effectiveness of learning materials, specifically in medical education.

Fine, Lauren, MD
Lauren Fine is an Internal Medicine trained Allergist/Immunologist currently working as an Assistant Professor of Medical Education at Nova Southeastern University in Davie, FL. She graduated from the University of Miami Miller School of Medicine. After medical school, she went to the University of Illinois Chicago for her Internal Medicine Internship, followed by the remainder of her Internal Medicine Residency and Allergy/Immunology Fellowship at the University of Minnesota. Her clinical career began with the development of an Allergy/Immunology Clinic at the University of Miami. During her time there she became very involved in PBL and Clinical Skills teaching, which led her to join Nova Southeastern University in 2017 to help build a Clinical Skills curriculum for their first class of MD students in 2018. She serves the role of Director of the Practice of Medicine 1 course for the first-year medical students. Her main passion in teaching is in the physician-patient relationship and in shared-decision-making and communication. When she is not in clinic or teaching, she loves to bake, travel and spend time with her kids.

Fox, Wesley, MD
Wes is a recent graduate of a new rural family medicine residency program in La Crosse, Wisconsin, where he now serves as a preceptor in the residents' continuity clinic in addition to managing his outpatient practice. He received his medical degree from the University of Wisconsin School of Medicine and Public Health and the Wisconsin Academy for Rural Medicine in 2016.

Frisch, Emily, MA
Emily Frisch is a third-year medical student at UC Irvine. She majored in Biology and Spanish as an undergraduate and completed her Master's in Leadership Development at Chapman University. Her research focuses include medical education, medical imaging, and clinician/patient interactions. At UC Irvine, she is involved in admissions, academic affairs, alumni board, and sexual education outreach. She is also a consultant for the startup Centaur Diagnostics.

Fung, Cha-Chi, PhD
Dr. Fung received her PhD in educational psychology from USC Rossier School of Education in 2003. She is the Vice-Chair for the Department of Medical Education and the Assistant Dean for Medical Education at Keck School of Medicine of USC. She has 18 years of experience in medical education research and faculty development. Dr. Fung is the course director for Designing Research on Innovations in Academic Medicine and Implementing Research on Innovations in Academic Medicine for the Master of Academic Medicine program at Keck School of Medicine of USC. She is also a faculty member for the AAMC Medical Education Research Certificate (MERC) program. At the national level, Dr. Fung has served as the regional representative for the AAMC Medical Education Scholarship Research and Evaluation (MESRE) Section and is currently the immediate past Chair for the Western Group on Educational Affairs (WGEA). Her area of interest is in assessment and evaluation.

Galang, Kristine, MD
Dr. Kristine J. Galang grew up in Vallejo, CA and attended Dominican University of California where she obtained a Bachelor of Science in Nursing, graduating cum laude. Kristine started her medical career working as an RN in the cardiovascular intensive care unit all while attending Ross University School of Medicine where she graduated with a Doctor of Medicine, earning high honors. Since beginning her residency at San Joaquin General Hospital in 2018, she continues to participate in various research projects including the project implementation of sepsis protocol to improve compliance in a 1-Hour Bundle. Her future healthcare interests include pulmonary/critical care. During her free time, she enjoys spending time with her husband, her dog and listening to audiobooks.

Gelovani, David, MS
David J. Gelovani is a 4th year medical student at Wayne State University School of Medicine in Detroit, Michigan. He serves as the president of the Class of 2020 Student Senate and is the current treasurer and former president of the Aesculapians Service Honor Society. To supplement his education with clinical and inter-professional teamwork experiences, he served as the medical clinic coordinator at the Community Homeless Interprofessional Program clinic and continues to mentor first and second year medical students there. Additionally, he founded the First Aid First Student Organization, which provides first aid training to incoming medical students, recruiting them to train the community to improve out-of-hospital emergency recognition and survival. In recognition of his commitment to humanistic ideals and attitudes by illustrating professional and ethical behavior while demonstrating compassion and empathy in the delivery of patient care, he was inducted into the Gold Humanism Honor Society. David graduated with a Master of Science degree in Basic Medical Sciences from Wayne State University School of Medicine and earned his Bachelor Degree in Biological Sciences at the University of Houston in Houston, Texas.

Goez, Helly, MD, FRCPC
Helly Goez MD, FRCPC is a pediatric neurologist ad developmental pediatrician in the Department of Pediatrics in the Faculty of Medicine & Dentistry (FoMD) at the University of Alberta. She currently holds the position of Assistant Dean, Diversity in the FoMD, and within the MD Program she is the longitudinal Physicianship course director. She is also director of the Neurometabolic Clinic at Stollery Children's Hospital and Glenrose Rehabilitation Hospital, and director of the Pediatric Movement Disorder Clinic at the Glenrose Rehabilitation Hospital.

Golek, Hayley, DO
Hayley Golek is a 2nd year family medicine resident in Scottsdale, Arizona where she is an active participant in the areas of patient safety and resident wellness. Originally from Barrington, Illinois, she

moved to Arizona with her family in pursuit of warmer weather. She earned her undergraduate (BS, Biology) and graduate (MS, Applied Biochemistry) degrees from Arizona State University where her thesis project involved the study of specific proteins involved in the development of Alzheimer's disease. She then went on to earn her medical degree from Midwestern University in Glendale, AZ. Upon graduation from residency, she plans to pursue a career in outpatient and eventually academic family medicine.

Gomaa, Nahla, MD, PhD
Dr. Gomaa is an associate Clinical Professor at the University of Alberta, Canada, and a member of the Faculty Development Committee at the Faculty of Medicine and Dentistry, University of Calgary, Canada. She has earned the Patient's Safety & Quality Management from the University of Calgary, and "Leadership" graduate from the University of Alberta. She is, in addition, a certified peer consultant in medical education. Member of the Society of teaching and learning, Canada, and of the Canadian Association for Medical education [CAME]

Gornes, Chris, MD
Dr. Gornes is a third-year resident at Long Beach Memorial FMRP. She serves as Academic Chief Resident and has a special interest in Global and Community medicine. Currently, Dr. Gornes is completing an area of concentration in Global Health and has participated in medical trips to Mexico, Jamaica, and soon Peru. She attended Virginia Commonwealth University School of Medicine and received her BA in English Literature from UC Berkeley. Her professional interests also include pediatric neurodevelopment, women's health, minor procedures, and inpatient medicine. Outside of medicine she enjoys baking, reading, traveling, practicing yoga, and spending time with her husband and two sons.

Green, Bart, DC, MSEd, PhD
Bart Green is a practicing chiropractor and epidemiologist in an interdisciplinary on-site wellness center serving a large corporation in San Diego. He previously was the first chiropractor to work at Naval Medical Center San Diego, developing interprofessional collaborative care in spine, sports, and combat casualty care clinics. Bart is the editor-in-chief of the Journal of Chiropractic Education and has taught in clinical and classroom settings training chiropractors, chiropractic students, medical students, nursing students, residents, physician assistant students, and Navy corpsmen. He is on the faculty of the National University of Health Science and serves as the associate editor in the Publications Department. He recently completed serving as a researcher for the Global Spine Care Initiative, a research initiative to reduce the global burden of spine disorders by bringing together leading health care scientists and specialists, government agencies, and other stakeholders to transform the delivery of spine care in underserved and low-income communities worldwide. Bart is a cycling fanatic, animal lover and proud graduate of the inaugural class of the Keck School of Medicine USC Medical Education master's program in the year 2000. He and his wife, also a 2000 graduate of the Keck School of Medicine USC Medical Education master's program, enjoy cooking, gardening and the great outdoors.

Gruber, Phillip, MD
Phillip F. Gruber, MD has practiced and taught since 2009 as faculty member in the USC Keck School of Medicine, Department of Emergency Medicine. He is also board certified in Clinical Informatics. In addition to his clinical and academic role, since 2012 he serves as the Chief Medical Information Officer of the LAC+USC Medical Center, the flagship 600 bed tertiary care academic medical center of the Los Angeles County Department of Health Services. Over the past six years Dr. Gruber has guided clinical adoption for the implementation of an enterprise-wide Cerner EMR, as well as for multiple other clinical systems and initiatives. Dr. Gruber's academic interests include emergency department operations, adoption of clinical systems, and clinical informatics education.

Guest, Brittany, DO
Dr. Brittany Guest is an Emergency Medicine physician at UCLA. She received her medical degree from Rocky Vista University College of Osteopathic Medicine in Colorado and completed her residency at UCLA/Olive View, where she was chief resident. She is currently the UCLA/EM:RAP

Access+Innovations in Medical Education (AIME) fellow, a joint fellowship between UCLA and the NGO EM:RAP GO. The fellowship was created to help improve access to medical education globally. As a fellow, Dr. Guest is working with newly developed residency programs internationally to help create education curriculum to train emergency medicine physicians in these countries. In addition to her international work, she is getting her master's in Academic Medicine at USC through the Keck School of Medicine.

Hagiwara, Yuya, MD, MACM
Dr. Hagiwara is the Fellowship Program Director for the Hospice & Palliative Medicine Fellowship at the University of Iowa. He is a board-certified geriatrics and palliative care physician with expertise in palliative care education and research in medical education. For his training, he completed a post-doctoral fellowship in Geriatric Palliative Medicine and a clinical fellowship in Geriatric Medicine, both at the University of Texas Health Science Center in San Antonio. He also holds a master's degree in Academic Medicine (MACM) from the University of Southern California. Dr. Hagiwara's academic focus includes integrating geriatric palliative care content into educational programs at the undergraduate and graduate medical education levels. His expertise includes developing educational contents in advanced communication skills, goals of care, pain management and management end of life symptoms.

Hallowell, Ronan, EdD
Dr. Hallowell is an assistant professor of clinical medical education in the Keck School of Medicine of USC. As a learning scientist in the Department of Medical Education, he works with colleagues to provide a suite of curriculum and instruction services to faculty and administrators that includes instructional design, faculty development and the Physician-Citizen-Scientist Curriculum Renewal Initiative. Dr. Hallowell is a faculty affiliate at the Gehr Family Center for Health Systems Science and Innovation where he co-teaches the Introduction to Health Policy course for second year MD students in the Professionalism and the Practice of Medicine Program. He is part of the team creating new health systems science and social justice curricula to be launched in 2021 and is an American Medical Association Health Systems Science Scholar. Dr. Hallowell serves as an associate director of the USC Center for Mindfulness Science which is a collaborative hub for interdisciplinary research and innovation in the practice of mindfulness. He is also a founding faculty member of the new M.S. degree program in Narrative Medicine teaching research methods. Dr. Hallowell conducts research on curriculum design, the medical humanities and cross-cultural perspectives on medicine. He holds an EdD in Educational Psychology from the University of Southern California, a MA in Philosophy and Religion from the California Institute of Integral Studies and a BA in Economics from Boston College.

Harris, Christina, MD
Dr. Harris obtained her medical degree from Harvard Medical School. She completed her internship and residency at New York Presbyterian/Weill Cornell Medical College. As an Associate Program Director for the UCLA Internal Medicine Residency Program, Dr. Harris has been a leader in diversity, equity and inclusion efforts within the Department of Medicine for the David Geffen School of Medicine at UCLA (DGSOM). She also serves as Faculty Chair for the Internal Medicine Residency Diversity Committee where she recently spearheaded several initiatives to promote a more inclusive environment for trainees and their patients. Within DGSOM, Dr. Harris holds several other leadership positions. They include Chair of the Equity, Diversity and Inclusion Subcommittee of the Graduate Medical Education Committee and Vice-Chair for DGSOM's Primary Care College. She previously served as chairperson of a Curricular Cultural Competency Task Force. They were charged with reviewing DGSOM's medical student curriculum and providing recommendations for addressing negative bias and stereotypes within the educational content. Her clinical and advocacy interests include women's health and care of underserved.

Haugen, Jessica Gonzalez, DO
Dr. Jessica Gonzalez Haugen is a Family Medicine resident physician at Adventist Health White Memorial. She is a Southern California native whose passion for serving the community began while working as a medical assistant in a primary care office in Montebello, California. She majored in Human Development & Aging at the University of Southern California and attended medical school at

Western University of Health Sciences. Her professional interests are community medicine, quality improvement, and women's health.

Heard, John, MS
John is a third-year medical student at the SUNY Downstate College of Medicine with a master's degree in Biomedical Sciences from the Icahn School of Medicine at Mount Sinai and BS from Tufts University. As an undergraduate, he was a member of the men's varsity lacrosse team and the Level the Field program, which brought college student-athletes into the classrooms of local middle schools to teach students about applying lessons from athletics to other aspects of their lives. At Mount Sinai, John studied microRNA biology in the context of virus infection and presented this work at the 2017 annual meeting of the American Society of Virology, with the assistance of an ASV Student Travel Award. Additionally, he volunteered with the Meds Visit Peds and Chemo Companions programs which paired hospital patients with students to provide emotional support. Moreover, he served as a student mentor, counseling younger master's students on research, academics, and the medical school application process. As a medical student at Downstate, John has sought to improve the well-being of his community through his role as the Director of Faculty Relations for the Peer Mentorship and Wellness Program. He is incredibly proud of this program and the conversation about mental health in the medical field that it helps to facilitate. Throughout John's education and professional life, he has strived to serve others and improve the well-being of both patients and their caretakers.

Hempel, Susanne, PhD
Dr. Hempel is a professor of Research Preventive Medicine at USC, faculty member at the Gehr Health Systems Science Center, affiliate adjunct senior behavioral scientist at RAND, and a professor at the Pardee RAND Graduate School (PRGS). She directs research at the Southern California Evidence Review Center, where she also leads contracts for federal agencies. She oversees a large portfolio of evidence synthesis projects and methodological projects aiming to advance the uptake of evidence-based knowledge in clinical practice.

Herrman-Werner, Anne, MD, MME
Anne Herrmann-Werner is a senior physician for psychosomatic medicine and psychotherapy at Tuebingen University Hospital (Germany) with a focus on chronic pain, transplant psychosomatics and liaison psychiatry. She has a Master of Medical Education from the University of Bern, Switzerland, and is head of the Medical Faculty of Tuebingen's skills lab. In 2018, she won the German national award for outstanding excellence in medical teaching ("Ars legend Medizin"), and in 2019, she obtained a full professorship in Medical Education in Erlangen, Germany. Her main teaching interests are along patient-physician communication and interaction – and particularly in light of the digital age. Within her faculty, she has developed the longitudinal communication curriculum, is responsible for the standardized patient program as well as OSCE exams, and is part of several steering committees. Besides medical students she also teaches students of nursing and midwifery. She received local and national fellowships and funding for several of her projects and published in international medical educational journals.

Hillier, Tracey, MD, MEd (HSE), CCFP, FRCPC
Tracey Hillier, MD, MEd (HSE), CCFP, FRCPC is a radiologist and assistant professor in the Dept of Radiology & Diagnostic Imaging in the Faculty of Medicine and Dentistry (FoMD at the University of Alberta. She is also associate dean of the MD Program in the FoMD at the University of Alberta. In this role, in collaboration with team leads within the MD program and across the faculty, she oversees all aspects of the undergraduate medical education program, including strategic planning, curriculum development, accreditation.

Hippargi, Surekha, MD
Dr. Surekha B Hippargi has been a professor at the pathology department of BLDE (Deemed to be University) Shri B M Patil Medical College, Hospital and Research Centre for 21 years. She is an active member of the medical education unit of the institute and is involved in student and new faculty orientation programs. She is passionate about trying different teaching and learning tools to encourage undergraduate students to actively involve themselves in the learning process. Dr.

Hippargi has an interest in computer technology and has developed a few animated images in pathology subject explaining about disease process. Additionally, she has developed a website for the pathology department. She is also working as a consultant pathologist in the BLDE hospital and has been successful in teaching illiterate adult women of BLDE. Her areas of interest include cytology and screening programs for breast and cervical cancers. She has more than 20 publications under her belt and has given many awareness talks on reproductive health issues in surrounding rural areas.

Hirschbaum, Julian, DO
Julian H Hirschbaum is a third-year resident in Internal Medicine+Pediatrics at LAC+USC Medical Center. He is interested in sustainable health development and expanding access to care for rural communities in developing countries across the world. He helped begin the Peruvian Community Health Worker (CHW) project by training the first CHWs and is now working to further develop the skills of these CHWs living along the Orosa and other branches of the Amazon River. He is a co-founder of Capacidad, a student-led global health organization that focuses on sustainable and culturally sensitive international health work. In the past, he has worked with immigrants from Central America and Mexico, providing basic medical services. He hopes to continue to work in an academic medical setting and to continue bringing healthcare to those in great need.

Hodgson, Carol, MS, PhD
Carol S. Hodgson received a Master of Science degree in biochemistry from the University of California, Riverside in 1983 and a doctorate in Education at UCLA in 1990. Before entering the field of medical education, Dr. Hodgson was a researcher in preventive medicine at the USC, School of Medicine. In 1992, Dr. Hodgson entered the field of medical education at the UCLA School of Medicine. In 1999, she became the Director of the Center for Educational Development & Research. She was recruited to UCSF in 2000 and served as the Director of the new Office of Educational Research and Development. In 2004, she was named the Associate Dean and Director of the new Office of Educational Development and Research at the University of Colorado Denver (CU Denver), School of Medicine. In 2010, she became the first J Allan Gilbert Chair in Medical Education Research at the University of Alberta (UofA) and in 2017, the founding Director of the IDEAS Office. Her research areas focus on professionalism, cancer education, and improved care for people with disabilities. Dr. Hodgson is an expert in curriculum design, evaluation, educational research, and faculty development. She has considerable experience with curricular change efforts at three medical schools. She has taught in numerous faculty development programs locally, nationally, and internationally. Locally she has co-directed the UCLA, UCSF, CU Denver, and the UofA Teaching Scholars Programs.

Hoffberg, Emily, BS
Emily Hoffberg is a second-year medical student at Case Western Reserve University. She has always shown a keen interest in medical education and has developed that interest as a teaching assistant in the anatomy curriculums at both UCLA and CWRU SOM. Recently, she became involved in the facilitation of CWRU's Ultrasound Elective, working alongside faculty to encourage ultrasound exposure during the preclinical years. Emily has found this to be the perfect intersection of her desires to improve medical education and her love of physiology. Her current research focuses on the efficacy of novel teaching techniques, such as gamification, in the CWRU SOM ultrasound curriculum.

Hohensee, Natalie, DDS, MACM
Natalie C. Hohensee (pronouns she/her/hers) is an Assistant Professor, Division of General Dentistry, Loma Linda University School of Dentistry. She is the course director for Tooth Morphology and the Course Manager for Professionalism, Mission and Personal Development. She oversees assessments for all predoctoral dental students and co-chairs the Teaching and Learning Committee. Her passions include wellbeing of health professional learners, increasing awareness of unconscious bias and privilege, and assisting learners in difficulty. Outside of work she is especially proud to be raising two daughters with her partner K.C. Hohensee.

Hosek, Lauren, BS
Lauren Hosek is a second-year medical student at the University of Utah School of Medicine (UUSOM). Her undergraduate research experience was in an organic chemistry lab synthesizing novel anti-cancer agents targeting inflammatory cytokines in the Department of Chemistry at Boise State University. Following her first year of medical school, she spent her summer performing a clinical research study on the effect of parity on women with congenital heart disease with the Department of Maternal-Fetal Medicine. As a member of the Professionalism and Diversity Committee at UUSOM, she has been involved in studying the effect of professionalism training in medical education.

Issaq, Hela, MD, MPH
Dr. Issaq is part of the teaching faculty for the KPSJFMR, which began with its first class of residents in July 2018. She completed her undergraduate studies in Molecular Cell Biology at the University of California, Berkeley and received her medical degree from the University of Michigan, as well as her Master's in Public Health at Dartmouth College. After graduating from residency at Harbor-UCLA, she joined the San Jose Kaiser Family Medicine department where she became faculty. She completed the University of California San Francisco Family Medicine Faculty Development Fellowship in 2019. She is now the Quality Improvement Director in addition to the Head of Community of the medicine curriculum.

Ivey, Kayla, BS
Kayla Ivey is a fourth-year medical student at Burrell College of Osteopathic Medicine. She earned her BS in Kinesiology at New Mexico State University in 2016.

Jacquet, Gabrielle A., MD, MPH
Dr. Gabrielle Jacquet is an Associate Professor of Emergency Medicine at the Boston University School of Medicine and an Attending Physician in the Emergency Department at Boston Medical Center. She received her MD from the University of Vermont and her MPH from Johns Hopkins Bloomberg School of Public Health. Dr. Jacquet completed her Residency in Emergency Medicine at Denver Health and her Fellowship in International Emergency Medicine and Public Health at Johns Hopkins. Dr. Jacquet focuses her work on improving and standardizing the delivery of global health training and experiences within undergraduate and graduate medical education. She has taught emergency medicine, assisted in developing emergency care systems and training programs, and conducted research in India, Ghana, Sudan, Rwanda, South Africa, Haiti, and Colombia. Dr. Jacquet has over 25 peer-reviewed publications and has lectured at many national and international emergency medicine conferences. Most recently, Dr. Jacquet has focused her time on founding and serving as Course Director for the newly released Practitioner's Guide to Global Health: a 3-part open-access, online, interactive course available at edX.org. Dr. Jacquet is the director of global health for the BMC emergency medicine residency program and the assistant director of global health at the BU School of Medicine.

Jain, Aarti, MD
Aarti Jain is an Assistant Professor of Clinical Emergency Medicine at the University of Southern California Keck School of Medicine and teaches in the residency program at the LAC+USC Medical Center. She completed her emergency medicine residency training and chief resident year at the LAC+USC Medical Center and stayed on to pursue a medical education fellowship and Master of Academic Medicine through the Keck School of Medicine. Her academic interests include simulation-based education, curricular innovation, and physician wellness.

Jalali, Cathy, MD
Dr. Jalali joined Keck School of Medicine of USC in 2018 as an Assistant Professor of Clinical Medical Education and Director of Faculty Development. Since 2000, she has assisted in the development and successful implementation of multiple grant-funded, pre-health pipeline programs and systems to identify/remediate struggling learning across the medical education continuum. Prior to arriving at Keck, Dr. Jalali served as Associate Program Director at Weill Cornell Internal Medicine Residency Program, where she developed and implemented a milestones-based evaluation system and

established a learner-centered faculty development model to optimize the educational experiences for all trainees.

Jayatilleke, Arundathi, MD, MS
Since joining the faculty at Drexel, Dr. Jayatilleke began her tenure as associate program director and then program director of the rheumatology fellowship, which she will continue at Temple. She has sought to develop herself as an educator and mentor for trainees at all levels from the first year of medical school onwards, foremost by concentrating on honing her own clinical skills, but also by both teaching and coordinating courses for trainees. She aims to be a champion for musculoskeletal exam teaching within medical education at the undergraduate and graduate level. As she began her career, she observed her students and residents trying to quiz themselves and retain and synthesize information, which led to her interest in adult learning theory. After a seminar on simulation, Dr. Jayatilleke became interested in the integration of games into formal curricula and have since tried to be deliberate both in studying game-based learning and in her own use of it in teaching. Over time, she has recognized the importance of (backwards) design in education: starting from outcomes and assessments and then understanding the level at which she needs to teach. Her hope is to use both and examine the ways in which games can best be used to increase engagement in learning as well as improve educational outcomes.

Jenks, Viveka, MEd, MBA
Viveka Jenks is the Education Innovations and Learning Design Manager at Kent State University College of Podiatric Medicine. The position includes faculty development of evidence-based teaching strategies, curriculum management and assessment. She earned a Bachelor of Science in the Physiological Sciences from the University of Stellenbosch (2002), a Master of Education in Curriculum and Instruction from Cleveland State University (2012) and a Master of Business Administration from Kent State University (2019). She is also a PhD candidate for Higher Education Administration with a certificate in Institutional Research and Assessment (Kent State University). Ms. Jenks' research interests include assessment of student learning, effective teaching techniques and effective learning in medical education.

Johnson, Claire, DC, MSEd, PhD
Claire is a Professor at National University of Health Sciences and serves as the Editor in Chief for three scientific, peer-reviewed journals: Journal of Manipulative and Physiological Therapeutics, Journal of Chiropractic Medicine, and Journal of Chiropractic Humanities. She is a collaborator on the Global Spine Care Initiative, which is a team of interprofessional and international spine experts that developed an evidence-informed, practical, and sustainable, spine health care model for communities around the world with various levels of resources. She has published multiple educational, clinical, and historical research papers. She is a member of the American Public Health Association and Chair of the Public Health Committee of the World Federation of Chiropractic. Her research interests are in health promotion and injury prevention. Her USC master's project focused on implementing an evidence-based curriculum in a chiropractic program and her doctoral dissertation focused on the association of biopsychosocial factors on physical activity in stroke survivors.

Johnson, Walker, BS
Walker Johnson is a second-year medical student at CUSM, where he currently serves as a member of the Student Honor Council. He graduated from Brigham Young University in 2018 with a BS in Biophysics and a minor in Italian. At BYU, Johnson was a research assistant investigating SNARE proteins and a laboratory assistant in organic chemistry.

Jurvis. Amanda, DO
Amanda is currently a first-year fellow in medical education and simulation at Hennepin County Medical Center (HCMC) in Minneapolis, MN. She works clinically in the emergency department at HCMC as well as the University of Minnesota Medical Center. She recently completed residency at Beaumont Health System in Royal Oak, MI where she was chief resident. She developed an interest in medical education during her second year of residency while attending the Council of Emergency Medicine Residency Directors (CORD) academic assembly. Amanda has an interest in medical

student/intern transition and interdepartmental simulation. Her fellowship has allowed her to move back home to Minnesota after being away for college, medical school, and residency. She has enjoyed the opportunity to spend more time with her parents and two younger sisters who live in the area. She also loves spending time with her new rescue dog, a 1-year old Aussie mix named Ryder. Outside of medicine, Amanda enjoys seeing new movies, jogging along the Mississippi River, and singing karaoke with friends. She has recently taken up cooking and enjoy trying new recipes.

Kanter, Michael, MD
Dr. Michael Kanter received a BS in Cybernetics from UCLA and MD from UCSF. Dr. Kanter has been the Executive Vice President and Chief Quality Officer for the Permanente Federation. He has a wide range of interests in clinical quality and patient safety and has designed and implemented a new model of care for chronic disease and prevention called Complete Care, and has designed and implemented KP Sure Net, a program to decrease missed or delayed diagnoses. He has authored more than 85 articles published in peer-reviewed journals, including The New England Journal of Medicine and Journal of the American Medical Association, as well as Harvard Business Review. He co-authored chapters in five books and is a frequent speaker at the Institute for Healthcare Improvement, National Patient Safety Foundation, and Diagnostic Errors in Medicine conferences and meetings.

Karan, Kaitlyn, BSN, RN-BC
Kaitlyn is a Registered Nurse working in the role as a Clinical Nurse Educator for Duke Primary Care (DPC), which is a part of Duke University Health System. She is originally from Pittsburgh, PA and attended Waynesburg University where she obtained her Bachelor of Science degree in Nursing. As a nurse, she has worked for West Virginia University Hospital on an inpatient Trauma unit and for The Department of Veterans Affairs at the VA Pittsburgh Health System on a Medical Surgical/ Cardiology unit. She transitioned from the bedside upon moving to Raleigh, NC in 2018 and pursued a career in clinical education with Duke. Although new to the educator role, Kaitlyn has been involved in many initiatives crucial to staff development and retention. Her focus throughout all educational programs is patient centered care and enhancement of the knowledge base of staff. As a result, she has become an important resource to the DPC team.

Kavoussi, Adriana, BA
Adriana Kavoussi is a medical student at SUNY Downstate and is extremely passionate about instituting new policies and programs that benefit her peers and colleagues with regard to mental health. She attended University of California, Berkeley as an undergraduate. There, she was Vice President of her sorority Alpha Phi, and implemented an education program that included lectures on substance abuse, sexual health and connected the house with a psychologist who could further support them. She was also one of the 20 student senators, serving 35,000 students. During her time as senator, Adriana piloted an online health and wellness course that is currently available to students. She worked to increase the amount of therapist and counseling sessions at the student health center. After college, she served as a field instructor in wilderness therapy where she acted as a therapist assistant and coached patients to meet their therapeutic goals in an alternative therapy setting. As a medical student, Adriana sits on the Medical Student LCME subcommittee to evaluate the Medical School curriculum based on student input. In addition, she was the Program Director for the Peer Wellness Program and helped to restructure the curriculum to better meet issues of burnout amongst medical students. Her and her team then studied their intervention on rates of depression in medical students compared to the national average. Adriana believes that adequate mental health support will make the world a better place and she continues to seek opportunities to help implement changes to make other's lives better.

Kawalec, Jill, PhD
Jill S. Kawalec, PhD is a Professor and Division Head of Preclinical Sciences at the Kent State University College of Podiatric Medicine (KSUCPM). She also serves as Director of Research for the college. Dr. Kawalec earned her BS in bioengineering from the University of Pennsylvania in Philadelphia, PA. She received her MS and PhD in biomedical engineering with a specialization in orthopedic biomaterials from Case Western Reserve University in Cleveland, OH. Her research

interests include orthopedic biomaterials for joint replacement, biological materials for the repair of osteochondral defects, and prevention of high-risk and diabetic foot complications. Dr. Kawalec coordinates and teaches the Principles of Medical Research course and delivers lectures on the principles of biomaterials for the Introduction to Podiatric Surgery course. Recently, Dr. Kawalec began incorporating innovative teaching methodology into her Principles of Medical Research course, in order to improve student learning and retention of the material. She has become passionate about the scholarship of teaching and learning and has been accepted into the prestigious Kent State University Teaching Scholars program for the 2019-2020 academic year.

Khashimova, Zilola, MD, MBA
Dr. Zilola Khashimova is a medical doctor specializing in Obstetrics-Gynecology and Laparoscopic Surgery with additional experience in Family Medicine. She began the PhD program with research at the Department of Obstetrics-Gynecology. Dr. Khashimova received her MBA from Francis Marion University, was a member of the Beta Gamma Sigma honor society and is certified as a Strategic Planner. She has taught medical students and residents for over 15 years as a part of teaching hospital and Physician Assistant students for the last 5 years at Francis Marion University, and now at Dominican University of California. Dr. Khashimova has also authored several peer-reviewed publications in medical journals and has consistently been a top performer throughout her medical training. She has experience presenting at conferences, trainings, and seminars, and is certified in Hospital Administration, Ovarian Failure, Oncology, and Ultrasound Diagnostics. Dr. Khashimova was awarded the distinction of Honorary Faculty Fellow at Dominican. She is a member of the South Carolina Ob/Gyn Society, the European Society of Gynecology (ESG), the Physician Assistant Education Association (PAEA), and the European Women's Management Development International Network (EWMD).

Kim, Gina, MD, MPH
Dr. Kim is a Pediatric Intensivist at Los Angeles County + USC. She received her BA in Computer Science from Wellesley College and worked as a software developer before she decided to pursue medicine. She attended the dual-degree MD/MPH Program at University of Texas Health Science Center at San Antonio where she also completed her residency. During her critical care fellowship at Children’s Hospital Los Angeles, she rediscovered her excitement for quality improvement and research. As the Co-Director of Scholarly Activity for the LAC+USC Pediatric Residency Program, she helps develop curriculum and mentors resident projects.

Kim, Innie, MD, MPH
Dr. Kim is a California native who received her BA in Mass Communication Studies at UCLA with initial career plans to work in the entertainment industry. After much soul searching, she decided to pursue medicine, which she felt was more of a calling than a career. She received her MD/MPH at The University of Iowa and is currently a second-year resident at Emanate Health Family Medicine Residency Program, formerly known as CVHP. Part of Dr. Kim’s journey as a young physician dedicated to improving mental health and addiction services for her patients includes her own struggles with depression and addiction. With the support of her friends, family, and compassionate psychiatrists and counselors, she has learned to live successfully with depression and overcome her issues with substance abuse. She has used this humbling experience as an opportunity to help others who feel alone, ashamed, and reluctant to seek help. During medical school she founded the Carver College of Medicine chapter of NAMI, specifically geared toward normalizing and destigmatizing mental illness in medical professionals. In her free time Dr. Kim enjoys spending time with her loved ones, watching stand-up comedy, traveling, playing with her two min pins, listening to music, dancing, and doing yoga.

Kim, Rory, PharmD, MACM
Dr. Rory E. Kim is an Assistant Professor of Clinical Pharmacy at the University of Southern California School of Pharmacy and a Board-Certified Ambulatory Care Pharmacist. She also holds a master’s degree in Academic Medicine from the Keck School of Medicine. After receiving her Doctorate in Pharmacy from the University of Kansas, School of Pharmacy, Dr. Kim completed a PGY1 Pharmacy Practice-Ambulatory Care residency and a Fellowship in Ambulatory Care and Academia. She then

served as a staff clinical pharmacist implementing clinical pharmacy services into safety net clinics until joining the faculty of USC in 2013. She was the residency program director for the PGY1 Pharmacy Residency in Ambulatory Care for four years. Her clinical practice site is the Specialty Endocrine Clinic at the LAC+USC Medical Center where she is part of an inter-professional care team caring for patients with diabetes. Currently, she is also the director of the PharmD Scholarly Project and the co-director of the USC School of Pharmacy International Summer Program. Additionally, she is a course coordinator for the Pharmacy Literature Analysis & Drug Information course, the Health Care for Special Populations elective and the PharmD Scholarly Project courses. She also serves as the chair of the PharmD Scholarly Project and the Excellence in Teaching committees. She has presented locally, nationally, and internationally on the topics of education, diabetes, dyslipidemia, and smoking cessation.

Knowlton, Katherine, PhD
For the last twenty years Dr. Knowlton has led and studied Balint groups, a consultation format which provides integrative empathy practice to enhance therapeutic relationships. Her Balint work has included training national and international audiences. She maintains a private practice in Seattle. She received her Clinical Psychology training at the University of Nebraska. She currently serves as the President of the American Balint Society.

Lai, Hollis, PhD
Hollis Lai, PhD is an associate professor in the School of Dentistry in the Faculty of Medicine & Dentistry (FoMD) at the University of Alberta. In addition, as Assistant Dean, Education Quality & Accreditation, he oversees the FoMD's commitment to educational quality improvement as well as develops and monitors accreditation processes across undergraduate and postgraduate medical education, dentistry, dental hygiene, medical laboratory sciences and radiation therapy education programs.

Lander, Lina, ScD
Dr. Lina Lander is responsible for developing and implementing strategies and innovations to support the educational mission of the UC San Diego School of Medicine. She facilitates on-going teaching and learning through collaborative technology-enabled innovation. Dr. Lander comes to UC San Diego most recently from Apple, Inc., where she worked as a Development Executive, leading multiple technology implementation initiatives to improve patient care, education, and outreach. Prior to her time at Apple, Dr. Lander was as an Associate Professor of Epidemiology at the University of Nebraska Medical Center. As the Graduate Program Director, Dr. Lander was instrumental in establishing the first PhD program in epidemiology in Nebraska. Dr. Lander serves as co-instructor of medical improv humanities elective course and oversees all research study evaluating participation in the humanities courses on well-being among medical students. She received her doctorate degree of science (Sc.D.) in Occupational Epidemiology from Harvard University.

Langston, Seth, MD
Seth Langston is currently completing his Neonatology fellowship in Los Angeles. He obtained his BS in Biomedical Science from Texas A&M University, where he graduated with Magna Cum Laude Honors. He received his MD from UT Houston Medical School in 2014. During his time in medical school, he was given the recognition of Outstanding Academic Achievement in Gross Anatomy and Outstanding Academic Achievement in Developmental Anatomy. He then completed his residency at UCLA, where he earned the Fellow Award for Excellence in Teaching and completed a Quality Improvement Lean Academy Certification Program.

Laynor, Gregory, MS, PhD
Gregory Laynor is a Medical Librarian at the Temple University Health Sciences Library in Philadelphia. He serves as liaison to Temple's School of Podiatric Medicine and School of Pharmacy. He is also a member of the Temple Libraries' Systematic Review Team and Outreach & Communications Strategic Steering Team. He has a PhD in English from the University of Washington and an MS in Library Science from Clarion University. Gregory draws upon his teaching background in the humanities to develop library instruction in the health sciences. He teaches

workshops for faculty and students on topics such as systematic reviews, predatory publishing, and 3D printing in medicine. His current research is on self-directed learning and visual learning in new digital study tools in medical education, the barriers libraries face in providing equitable access to proprietary study resources, and the creation of Open Educational Resources to meet the needs of medical students.

Lee, Rhianna, BA
Rhianna Lee is a clinical technician and researcher at the Central Coast Biotech Institute in Oxnard, CA. She earned her bachelor's degree in Interdisciplinary Studies from the University of California, Berkeley with a focus in Gender Women's Studies, Rhetoric, and Public Health. Her honors thesis explored the clinical, social, and marketing aspects of the HPV vaccine, Gardasil. She has completed a pre-medical post-baccalaureate from UCLA and is in the process of applying to medical school. She volunteers at Livingston Memorial Hospice and works at the University of Southern California's Interaction Lab as a clinical research coordinator.

Lenz, Anika
Annika Lenz is a second-year medical student at the Keck School of Medicine of USC. Although keeping an open mind, her interests are shifted towards pediatric sports medicine which combines her passion for kids and athletics. From experience as a student-athlete-alumna at UCLA, while pursuing a major in psychobiology, she has always enjoyed the combination of sports and science, while interacting with others in a team setting. In addition to participation in medical school education research, she has been active in research involving molecular pathways in colorectal cancer, investigating the impact of sex, age, and ethnicity on the survival of patients with rectal cancer, and most recently participating in the NIDDK Research Internship at Stanford.

Leung, Kenneth, MS
Kenny is a second-year medical student at Carle Illinois College of Medicine – "the world's first engineering-based college of medicine" – located at University of Illinois, Urbana-Champaign. Kenny previously received his Bachelor's degree in Electrical Engineering and Computer Science from University of California, Berkeley, and Master's degree in Medical Engineering from University of Washington. Prior to starting medical school, he worked as a software engineer at a healthcare joint-venture developing population health management and hospital quality metrics analytics software, at a start-up implementing back-end interfaces to connect labs, hospitals, e-prescribing and lab interpretation service companies together, as well as at a quality-driven hospital improving a software system's front-end user interface for the care team and provider to easily enter procedure data and generate a procedural report. He has strong interests in developing products that provide an intuitive end-user experience and help users be more efficient in their tasks. He hopes to become a future physician-innovator to deliver compassionate medical care, advance healthcare innovations, and advocate adoption of impacting healthcare technologies.

Levine, Diane, MD
Dr. Diane Levine is a Professor of Medicine and the Vice Chair of Education for the department of Internal Medicine at Wayne State University/Detroit Medical Center. She has been heavily involved in multiple innovations in medical education spanning both realms of curriculum development and innovation. She was the senior project mentor on a 6-month study regarding the creation of an innovative longitudinal, gamified, team-based board review curriculum that subsequently changed the standard of the residency's board review. Furthermore, in this regard, she has been senior author on multiple posters and a manuscript submission highlighting the design, implementation, and analysis of gamification in Med-Ed as it pertains to Internal Medicine.

Lewis, Leanna, LCSW
Leanna W. Lewis, LCSW is the Co-Chair of the Diversity Equity, Inclusion Educational Taskforce and Manager of Cultural Humility Initiatives at UCSF Benioff Children's Hospital Oakland. She also holds the position of Administrative Director for the Program in Medical Education for Urban Underserved (PRIME-US) at the UCSF/UC Berkeley Joint Medical Program site. As a Licensed Clinical Social Worker, Leanna spent more than a decade as a mental health clinician at the Center for the

Vulnerable Child (CVC) department at UCSF Benioff Children's Hospital Oakland, providing home-based clinical mental health services and support services to foster youth and their families through a National Health Care for the Homeless program. She is an experienced lecturer, trainer, and consultant in the areas of diversity and inclusion, cultural humility, culturally responsive and trauma informed practice, and social determinants of health. For more than 15 years, she has worked with a culturally and socioeconomically diverse population in academic institutions, community agencies, health care settings, and private human service organizations.

Lim, Sean, BS
Sean Lim is a 2nd year medical student at the Touro University of California College of Osteopathic Medicine in Vallejo, California. He graduated in 2017 from the University of Southern California with a Bachelor of Science in Biophysics. Additionally, he was a Cinematic Arts minor, during which he learned game design, shot films, and even took a class under a Star Wars visual effects artist. For a class final, Sean was the development team lead for a card game that turned the dinner table into a competition of who could contaminate their dinner mate's plates with germs. After college, he continued his microbiology lab research projects in collective decision-making in swimming bacteria. In the lab, he leveraged computer programming to expedite experiments, such as long microscope time lapses and comparing genes between whole bacterial chromosomes. Sean worked mostly with Javascript, Python, and MATLAB. He has published a paper in collaboration with a cyber-physical-systems engineering team and presented his research at multiple conferences. Sean loves sports, including basketball and ultimate frisbee, and played for his medical school's travelling volleyball team. He also enjoys cooking budget-friendly healthy meals with friends, and he is the CFO of a Vallejo urban-farming nonprofit that serves to improve the nutrition health of the community through growing veggies at home. You can often find him hiking or running through a lush trail.

Liu, Alan, MD
Alan Liu, MD, is an Assistant Professor, Department of Medical Education at Keck School of Medicine of USC and the Assistant Director of the Clinical Skills Education and Evaluation Center. He administers and implements Objective Structured Clinical Examinations (OSCEs) in collaboration with the Introduction to Clinical Medicine course and the core clerkships. He evaluates medical students' performance of core competencies related to patient care and communication skills through the Clinical Performance Exam (CPX). Along with evaluation and assessment, he also engages in the remediation of clinical skills of the medical students. Dr. Liu recruits and trains standardized patients for both teaching and assessment as well as monitoring their performance for quality assurance. Dr. Liu is the Lead Trainer of the Trainers' Group in the California Consortium for the Assessment of Clinical Competence (CCACC), which is a consortium of eight allopathic medical schools in California. He is also a member of the American Association of Medical Colleges Group on Educational Affairs (AAMC-GEA).

LoBasso, Michael, BS
Michael is a second-year medical student at the University of California, Irvine. He has a particular interest in medical education and medical ethics. He is currently the president of An Lanh Free Medical Clinic, where the proposed study is being conducted.

Loda, Teresa, MS
Teresa Loda is a psychologist and research scientist at the Department for Psychosomatic Medicine and Psychotherapy at University Hospital Tuebingen. She is mainly responsible for teaching projects that focus on peer-assisted learning. She is interested in communication (doctor-patient encounters) and practical learning skills.

Ma, Peter, DO
Peter Ma is a 3rd year Pediatrics resident at the Loma Linda University Children's Hospital's Primary Care Tract and works in association with Riverside University Health Systems. He has a particular interest in working in patient education and childhood obesity.

Madhok, Manu, MD, MPH
Dr. Madhok is Associate professor of pediatrics and former director of pediatric emergency medicine fellowship program. He is involved in simulation based medical education for pediatric and emergency medicine trainees. He is currently involved in simulation based curriculum development for pediatric skills in emergency medicine residency.

Maltagliati, Anthony, MS
Anthony Maltagliati hopes to work in academic medicine where he can innovate patient care through the pursuit of her passions. He believes the three essential legs of tripod are: clinical research, community service, and medical education. Upon receiving his MD degree, he will have earned Distinctions in Research, Community Service, and Medical Education. He has authored numerous abstracts and peer-reviewed publications ranging from basic sciences to clinical risk modeling and presented his work at the American College of Cardiology National Conference and the American Geriatrics Society National Conference as a Plenary Presentation in 2019. He has completed over 250 hours of service in various free clinics. He also has three years of experience teaching as a Head Graduate Teaching Assistant for the University of Arizona Physiology Department, piloting a graduate teaching assistantship for graduate-level Pathology, assisting in graduate-level Gross Anatomy lab for three summers, developing a CME Anatomy Course for local Physical Therapists, and most recently, developing a “Spiraling Curriculum” consisting of over 500 ‘Step 1 style’ questions administered to the University of Arizona College of Medicine Class of 2022 on a weekly basis to assist with information retention and longitudinal USMLE Step 1 preparation.

Mao, Kai-Hong, MD
Dr. Kai-Hong Jeremy Mao received his medical training at Creighton University School of Medicine. He completed his general psychiatry residency training at the UCLA-San Fernando Valley Program. In 2016, he began a child and adolescent psychiatry fellowship at the University of Southern California. He is board certified in both general Adult Psychiatry and Child and Adolescent Psychiatry. Dr. Mao joined the psychiatry faculty after graduating from his fellowship in 2018. In addition to his clinical work, Dr. Mao serves as the Keck School of Medicine's Psychiatry Clerkship Director.

Margolis, Rebecca, DO
Dr. Rebecca Margolis practices Pediatric Anesthesiology at Children’s Hospital Los Angeles and presently serves an assistant professor of clinical anesthesia in the Department of Anesthesiology Critical Care Medicine. She is the Residency Director and Site Director for the rotating anesthesia residents. She chairs and sits on multiple hospital committees and plays a very active role in the education of the residents, fellows, and nursing staff at Children’s Hospital. Dr. Margolis also Co-Chair’s the longest running national pediatric anesthesiology meeting. Dr. Margolis is passionate about fostering physician well-being and speaks nationally on this topic. Dr. Margolis received her undergraduate degree from New York University, with a major in metropolitan studies. Her D.O. degree was earned through the Philadelphia College of Osteopathic Medicine in 2010. She completed anesthesia residency at Virginia Commonwealth University in Richmond, Virginia. Her fellowship in pediatric anesthesiology was obtained at Children’s Hospital Los Angeles. Dr. Margolis has been married to Ben Margolis since 2005. They live in Burbank, California with their dog Donovan and son Dexter. She and Ben are avid outdoor enthusiasts spending their weekends hiking, taking Donovan to the dog beach, or exploring National Parks.

May, Win, MD, PhD, FRCP
Dr. Win May is a Professor in the Division of Medical Education, and the Director of the Clinical Skills Education and Evaluation Center at the Keck School of Medicine. She is a Distinguished Faculty Fellow of the USC Center for Excellence in Teaching, and a member of the California Consortium for the Assessment of Clinical Competence. She was a member of the Association of American Medical Colleges (AAMC) Research in Medical Education (RIME) Planning Committee. She served as a member of the United States Medical Licensure Examination (USMLE) Step 2 Clinical Skills Test Material Development Committee for the National Board of Medical Examiners. She served as a member of the Advisory Committee of the AMA Learning Environment Study. She is a Co-Director of the Intersessions Course, teaches in the Introduction to Clinical Medicine (ICM) Program and has

been a faculty mentor in the Professionalism and the Practice of Medicine (PPM) course since its inception. She is an instructor in the Masters of Academic Medicine and Faculty Development programs. She has worked collaboratively with the Institute of Creative Technologies to develop a virtual standardized patient. Prior to joining USC in May 2000, Dr. May worked for the World Health Organization (WHO) in Geneva and New Delhi. She was the founding Dean of the Institute of Nursing in Myanmar. Dr. May is a reviewer for medical education journals, and has written journal articles and book chapters in medical and nursing education. Dr. May was awarded an honorary Fellowship from the Royal College of Physicians of London.

McDermott, Allyson, MD
Allyson is an Assistant Professor of Clinical Pediatrics at Connecticut Children's and the Assistant Clerkship Director for Inpatient Pediatrics at the UCONN School of Medicine. She also serves as the Faculty Director for her division's faculty development educational programming. Allyson completed her residency in pediatrics at Children's Hospital Los Angeles, where she began her journey into medical education as part of the Education Track; and continued at CHLA for her fellowship in pediatric hospital medicine where her scholarly work focused on evaluating parental understanding of asthma education prior to hospital discharge. She is currently pursuing a Master of Academic Medicine degree through Keck School of Medicine at the University of Southern California to further her educational and leadership skills. Outside of work, Allyson enjoys spending time with her family and friends, chasing personal bests on her spin bike, and experimenting with new recipes.
amcdermott@connecticutchildrens.org

McKinnell, Zoe, MD
Zoe is a second-year internal medicine resident at Mount Sinai St-Luke's and West Hospital where she founded Sinai Storytellers. She is passionate about improving communication skills among physicians. During medical school, she worked on a project called WatchDoc, an online platform, which allowed physicians to post individualized discharge videos for their patients to watch at home. She was also awarded a Michael Pitillo Essay Prize, a national essay writing competition for health and social care students in the UK, for her essay on resilience. She is interested in pursuing a fellowship in hematology-oncology. Outside of work, she enjoys marathon running, exploring New York City and considers herself to be ice cream connoisseur.

Mecham, Jeffrey, BS
Jeffrey Mecham is a third-year medical student at the Mayo Clinic Alix School of Medicine. Prior to medical school, Mr. Mecham earned a BS in business management, graduating magna cum laude and being selected as the BYU Marriott School of Business outstanding student for General Business Management his senior year. It was during this time that he developed a passion for learning and teaching, working part-time as a Spanish instructor for new missionaries preparing to leave for communities across the United States and around the world. After graduating, he and his wife moved back to his hometown of Las Vegas, Nevada, where he worked as a healthcare medical Spanish interpreter. There, he saw first-hand the great need for language services for many members of the United States' Spanish-speaking community. In medical school, he co-founded the medical Spanish interest group and medical Spanish longitudinal elective, and helped work with administration and students to establish protocols that encourage ethical practices when working with limited-English patients.

Mihalek, Alexandra J., MD
Dr. Mihalek is a Pediatric Hospital Medicine fellow in the Division of Hospital Medicine at Children's Hospital Los Angeles and a Clinical Instructor of Pediatrics at the Keck School of Medicine of the University of Southern California. She is involved in advocacy efforts at both the local and national level, and is the co-founder of the CHLA Pediatric Advocacy Collaborative. She is also currently serving on the national American Academy of Pediatrics Resolution Task Force. For her work in improving vaccine uptake via inpatient administration and policy change, she has received the Academic Pediatric Association Paul C. Young MD Trainee Research Award (2017), the Gary F. Krieger MD Pediatric Advocacy Award Grant (2016), and the Wilbert Mason & Lawrence Ross Award for Excellence in Vaccine Preventable Infections (2016). She has co-authored an American Academy

of Pediatrics resolution regarding immunization access, which was voted in the Top 10 at the American Academy of Pediatrics Annual Leadership Forum in 2018. Dr. Mihalek completed pediatrics residency at CHLA and was a member of the Improving Medicine: Pediatricians and Communities Together (IMPACT) Community Health advocacy research track, for which she now serves as a mentor for current residents. Prior to this, she graduated as a member of Alpha Omega Alpha from the Keck School of Medicine of the University of Southern California and received her undergraduate degree in Government from Harvard University.

Monahan, Rose, MD
Rose Monahan is a 2nd year Internal Medicine Resident at LAC+USC Medical Center. She is interested in pursuing a fellowship in Allergy & Immunology.

Morningstar-Kywi, Noam, BS
Noam Morningstar-Kywi is a third-year PharmD student and a second-year master's student in the pharmacology and pharmaceutical sciences program. Prior to entering pharmacy school, Noam worked for 10 years as a veterinary technician, and during this time, he completed his Bachelor of Science degree in Neurobiology, Physiology, and Behavior at the University of California, Davis. Noam has taught, mentored, and assisted throughout various pharmacy and pharmacy related courses at USC, including international exchange programs, since 2018. Noam's research interest lies at the intersection of medicinal chemistry and pharmacogenomics, examining how changes to protein structure induced by genetic variation affect their interactions with different medications. He has been a member of Dr. Ian Haworth's computational chemistry lab since 2017, where he uses molecular modeling and docking software to investigate ligand-specific effects of nonsynonymous mutations, a project supported through the Dean's PharmD Research Fellowship. Noam has further realized his interest in academia by working with the PharmD Curriculum Council on curricular realignment. He is also collaborating with several faculty members to incorporate active learning in the classroom, including the introduction of a computer-based adaptive case delivery. Noam's long-term career interests include the health-system wide implementation of proactive pharmacogenomic testing and the teaching of medicinal chemistry.

Morris, Heidi, MD
Dr. Heidi Morris is a Pediatric Hospitalist at Children's Hospital Los Angeles working as a nocturnist. She completed her medical education at Chicago Medical School in 2009, then completed pediatric residency at CHLA in 2012. Since then, she has been faculty at the University of Southern California as an assistant professor of clinical pediatrics under the clinician educator tract. For the past five years, she has taught "Introduction to Clinical Medicine" at the USC Keck School of Medicine. Additionally, she is the nighttime educator lead at CHLA for their pediatric residency program. She has also won a pediatric residency faculty teaching award and been nominated for the Morris & Marry Press Humanism award both in 2018. Her interests include residency education and improving the care of patients with limited English proficiency.

Mosqueda, Laura, MD
Dr. Laura Mosqueda was appointed dean of the Keck School of Medicine of USC on May 1, 2018. Prior to her appointment as dean, Dr. Mosqueda, a professor of Family Medicine and Geriatrics and a professor at the USC Leonard Davis School of Gerontology, served as associate dean of Primary Care and the chair of Family Medicine. Before coming to the Keck School of Medicine of USC, Dr. Mosqueda worked at the University of California, Irvine School of Medicine for 14 years. Starting as the director of the Program in Geriatrics, she occupied the Ronald W. Reagan Endowed Chair in Geriatrics and later served as the chair of Family Medicine and associate dean of Primary Care. An accomplished physician and researcher, Dr. Mosqueda is a national and international expert on elder abuse and neglect. She has testified in front of Congress and has been invited to the White House several times to discuss elder justice initiatives. In addition to her leadership in clinical care and research, Dr. Mosqueda has been actively involved in medical education. She has particular interest in care of vulnerable and underserved populations and precepts interprofessional health care students at a homeless shelter on Skid Row.

Mou, Margaret, DO
Margaret Mou is currently a Pediatric Hospitalist Medicine Fellow at Texas Tech University Health Science Center's Covenant Children's Hospital. She went to medical school at University of North Texas, and she did her residency at NYU Winthrop Hospital, where she also served as a Chief Resident.

Munjy, Luma, PharmD
Dr. Luma Munjy is currently an Assistant Professor of Pharmacy Practice at the Chapman University School of Pharmacy. Dr. Munjy received her Doctor of Pharmacy degree from The University of California, San Francisco in 2013, and continued her training as a resident in Ambulatory Care at The University of Southern California from July 2013 to July 2014. Following residency, Dr. Munjy pursued her passion for teaching and joined California Health Sciences University (CHSU) as an Assistant Professor of pharmacy practice in the Clinical and Administrative Sciences department. There, she established a clinical pharmacy service at one of the largest Federally Qualified Health Centers in the Central Valley with an aim to reduce medication-related problems and establish an inter-professional care team to improve chronic disease management for an underserved, indigent population. Dr. Munjy's clinical research focuses on methods to imbed clinical pharmacists in ambulatory care settings with an emphasis on inter-professional team-based delivery of care. In addition to Dr. Munjy's clinical research interests, Dr. Munjy is currently enrolled in the Master of Education in Health Professions degree through Johns Hopkins University to enhance as an academician and explore how health professional students can be better trained and assessed in the affective domain of learning.

Munoz, Maria, MD
Maria Munoz, MD, is a Family Medicine Physician in South Texas. She is Clinical Adjunct Faculty in the Department of Family and Community Medicine at the University of Texas Rio Grande Valley. She was also the Clerkship Director and Associate Program Director, at the University of Texas-Rio Grande Valley (UTRGV), Family Medicine Residency. Prior to joining UTRGV, Dr. Munoz was a Family Medicine Regional Clerkship Director for the University of Texas Health Science Center in San Antonio. She serves on the Commission of Public Health with the Texas Academy of Family Medicine, as well as the Commission on Academic Affairs. Additionally, she is interested in curriculum development and resident/student evaluation processes. Dr. Munoz has 2 beautiful children, John Paul and Matthew. Her personal hobbies include crocheting and writing children’s books. In her spare time, she enjoys walking the beaches of South Padre Island.

Nazarkhan, Fathima, MD
Fathima Sarah Nazarkhan, MD is a Clinical Faculty in the Department of Family Medicine at Harbor UCLA Medical Center. She has conducted surveys assessing health literacy of clinic patients at an FQHC in Los Angeles and was also part of a group of physicians and medical students doing community-based research revolving around the social determinants of health in Watts. She currently serves as Co-Chair of the Curriculum Committee at the Harbor UCLA Family Medicine Residency Program and has a special interest in developing teaching models to improve resident education.

Neal, Nikette, MD
Dr. Neal has a passion for interprofessional collaboration and is devoted to working on advances in interprofessional education to produce a collaborative practice-ready health workforce. As the Director for Interprofessional Collaboration for the Dr. Kiran C. Patel College of Allopathic Medicine at Nova Southeastern University (NSU), she has the unique opportunity to work with nearly 20 health professions programs on the same campus. Though she is early in her career in medical education, Dr. Neal has maintained involvement in interprofessional ventures throughout and even prior to her formal training in medicine. Through participation in several key initiatives, including international interprofessional service projects, creation of high-fidelity interprofessional simulation cases, and development of the Interprofessional Day at Nova Southeastern University, Dr. Neal has demonstrated that she has the skill, determination, and motivation to be a leader in interprofessional education and collaboration. As the Course Director for the Practice of Medicine 3 clinical skills course, she is responsible for creating and implementing standardized patient cases for students on a

weekly basis. Dr. Neal frequently works with other colleges to develop partnerships for collaborative student learning and simulation.

Neel, Nicholas, BA/BS
Nicholas Neel is a second-year medical student at the University of California, San Diego School of Medicine. Prior to his enrollment, he worked in the biomedical field studying the use of porcine-derived islets for transplantation in type 1 diabetics and the use of a CD4-based chimeric antigen receptor (CAR) T-cell therapy as a novel cure to HIV infection. These experiences fueled his passion for scientific inquiry which has translated into medical education research. He was part of the inaugural course of medical improv at UCSD and is also an active member of the improv group, Funny Bones, at the UCSD School of Medicine. After experiencing the benefits of improv, both personally and professionally, he hopes to study and share these insights with fellow medical students.

Nelson, Tessa, BS
Entering medical school, Tessa was excited about the opportunities present at CWRU SOM. Prior to medical school, she had little exposure to research and was hesitant about the subject due to ignorance about what research entails. Her reservations quickly diminished after discovering the world of innovations in medical education research. She participated in a project that dealt with the integration of “First Five” – a program designed to teach first year medical students basic lifesaving skills – into the curriculum. She also led the integration of Stop the Bleed training into first-year medical student orientation for the 2023 class. As part of a multi-center study, the data from the training will be used collectively with data from four other medical schools. Additionally, she participated in CWRU SOM’s ultrasound elective first year, which showed her the benefits and joys of learning ultrasound during her preclinical years. Naturally, she jumped on the opportunity to study whether gamification can be integrated into the curriculum for preclinical medical students as an effective teaching method. She looks forward to continued involvement in current and future medical education projects.

Nguyen, Tammy-Tam, MS
Tammy-Tam Nguyen is a third-year medical student at Burrell College of Osteopathic Medicine. She received a BS in Biological Sciences from University of California, Davis and graduated from University of Southern California with a MS in Gerontology.

Novak, Daniel, PhD
Dr. Novak is an assistant professor of clinical medical education in the Keck School of Medicine of USC. He earned a master’s degree in educational technology and instructional design from San Diego State University, and his Ph.D. in Learning Sciences from the University of Washington, Seattle. His practice focuses on the development of innovative postgraduate professional training programs for teachers, engineers, and physicians. His research focuses on the development of expertise across the career-span, with a focus on how learners develop expertise through reflective and deliberate practice. In 2018, he served as a consultant for a WHO funded project to support pediatric health in Mongolia and won a grant from the American Medical Association’s Accelerating Change in Medical Education initiative. In 2019, his team won the AAMC Western Group on Educational Affairs’ Computer Research in Medical Education (CRIME) award for innovative technological research, and his latest article in Academic Medicine has been nominated for the New Investigator award in the Research in Medical Education division.

Nyquist, Julie, PhD
Dr. Julie G. Nyquist is the director of the Master of Academic Medicine Program and the lead instructor for the Introduction to Academic Medicine (ACMD 501) and the Accreditation and Program Evaluation (ACMD 514) courses. She is also part of the team that teaches learning and curriculum design (ACMD 511), professionalism (ACMD 513) and leadership (ACMD 502; 503). Dr. Nyquist also developed and directs a flexible (online) elective for 4th year medical students, Preparing to Teach and Lead in Medicine, that has been completed by over 250 medical students since first offered in 2018. Dr. Nyquist has been on the faculty at USC since 1981, and from 1981 – 2014, she served as

the program evaluation specialist for the school. She has been a member of most of the school's curriculum committees and co-chaired the university's effort to move toward Competency-Based Medical Education (CBME). Within faculty governance, she has served twice as President of the Medical Faculty Assembly and also served in many capacities with the university-wide Academic Senate, including service on the board (2002-2006, 2010-2012). In conjunction with her USC position, Dr. Nyquist held the role of Director of Medical Education at a regional medical center in Bakersfield, California for 8 years (1993-2001). Nationally, she has developed and delivered over 900 workshops and presentations on a wide variety of educational and leadership topics, primarily to groups of health professions' faculty.

Owattanapanich, Natthida, MD
Natthida Owattanapanich, NO, is a Trauma Surgeon and intensivist at the Department of Surgery, Faculty of Medicine Siriraj Hospital. She is currently a research fellow at the Division of Trauma Surgery, University of Southern California. Dr. Owattanapanich attended medical school at Mahidol University. She graduated in 2012 and began general surgery resident training in 2016. In 2018, she completed a critical care medicine fellowship at the same University. She is interested in medical education and has recently applied for the master's degree program in academic medicine.

Palmer, Brandon, MD
Brandon is a first-year pediatric hospital medicine fellow at the Children's Hospital of Los Angeles. He completed his medical school and residency training at the Medical College of Wisconsin. His clinical interests are in family-centered rounds, shared-decision making and complex care. His scholarship interests are in medical education, with specific interests in game-based learning, and use of mentorship techniques for faculty development. Brandon's previous works include development of a family-feud based session on respiratory pathology in pediatrics, as well as development of a longitudinal mentorship program between pediatric residents and medical students. He is currently enrolled in the USC Masters of Academic Medicine Program. In the future, Brandon hopes to continue in academic medicine and eventually become a residency or fellowship program director. In his free time, he enjoys hiking, golfing, cooking and spending time with his wife.

Panchal, Heena, MD
Dr. Panchal is a Behavioral Medicine faculty at Kaiser Permanente San Jose Family Medicine Residency. She completed her combined Family Medicine and Psychiatry Residency at the University of Pittsburgh Medical Center, McKeesport and Western Psychiatric Institute and Clinic. She has been a proponent of Balint groups as a way to maintain wellness in trainees and faculty and has co-facilitated the KPSJFMR Resident Balint group since its inception. Dr. Panchal also leads resident training in opioid use disorder and chronic pain management.

Paolucci, Natalie, BHSc
Natalie Paolucci is a second-year medical student at the University of Toronto, with an interest in emergency medicine, simulation, and medical education. She completed her Bachelor of Health Sciences at McMaster University in 2018, with a specialization in Child Health. She has also assisted in developing the current research project under the supervision of Dr. Caroline Filipowska, a staff Emergency Physician at Sunnybrook Health Sciences Centre, Toronto, and a lecturer at the University of Toronto.

Paree, Joshua, BS
Joshua Paree is currently an MS3 at the University of Arizona College of Medicine located in Tucson, AZ. He previously completed a BS in Neuroscience and Cognitive Science at the University of Arizona in 2016. During that time, he participated in multiple research projects utilizing Drosophila melanogaster models of intellectual disability and ALS. Presently, he is involved in two research projects at the medical school, the first of which aims to discern the effects of low-intensity pulsed ultrasound on TBI head pain and brain damage in TBI-induced mice. His second project aims to understand the impact of weekly NBME style questions regarding previously covered medical school topics on information retention, student wellness, and Step 1 performance. This will eventually culminate in a capstone for the Medical Education Distinction Track. In addition to research, Joshua is

heavily involved in his school. He has served 2+ years as Class Representative in student government, as well as other leadership positions in Medical Student Ambassadors, Diabetes Education and Prevention Organization, Pima Juvenile Inmate Education Program, American Medical Student Association, Cup of Coffee Conversations to Promote Professionalism, and as a Peer Mentor in his Medical School's Peer Support Program. He is passionate about student mentorship and wellness and hopes to eventually work as an attending in an academic institution where he can work closely with both students and residents.

Pavlov, Anna, PhD
Dr. Pavlov received her BA in psychology from UCLA and obtained her doctorate in clinical psychology from the California School of Professional Psychology, Los Angeles. She completed a two year fellowship in Primary Care Health Psychology at Genesys Regional Medical Center in Flint, Michigan, affiliated with Michigan State University School of Medicine and afterward joined the faculty in the family medicine residency program as the Associate Director of Behavioral Science. Returning to Southern California, Dr. Pavlov served as the Director of Behavioral Medicine and Addiction Medicine at the Pomona Valley Family Medicine Residency Program for over 18 years. She has a special interest in psycho-oncology, perinatal mental health and resident and physician wellness. She has been active in many scholarly activities and co-edited a first volume and, a second entitled Cinemaeducation: A Comprehensive Guide to Using Film in Medical and Graduate Education (2012). More recently, she wrote on physician burnout. In her free time, Dr. Pavlov enjoys spending time with her family and friends. She is an avid film and theatergoer, practices yoga and loves international travel. Dr. Pavlov is proud to have joined Emanate Health (formerly known as Citrus Valley Health Partners) in West Covina 3 years ago as they launched a new Family Medicine Residency Program.

Pendergraph, Bernadette, MD
Bernadette Pendergraph, MD is an Associate Professor at the David Geffen School of Medicine in the Department of Family Medicine. She is also the program director for the Harbor-UCLA/Team to Win Sports Medicine Fellowship. Besides being the team physician for Gardena High School, Los Angeles Harbor College, and Southwest College, Dr. Pendergraph has expanded the curriculum in addiction medicine and pain management with Dr. Gloria Sanchez at Harbor-UCLA's Department of Family Medicine.

Petko, Kimberly A., MD, MPH
Dr. Petko is a Pediatric Hospitalist at Children's Hospital Los Angeles (CHLA) and a co-founder of the CHLA Pediatric Advocacy Collaborative. She completed her pediatrics residency at CHLA where she received the Chief Resident's Service Award and was a member of the Improving Medicine: Pediatricians and Communities Together (IMPACT) Global Health advocacy research track. Her work on child trafficking has been awarded by the American Academy of Pediatrics, National Conference and Exhibition (2017), and the AAP-CA2 Advances in Pediatrics Symposium (2017). She received her Bachelor of Arts degree in Community Health and Child Development at Tufts University, and both her Doctorate in Medicine and Master of Public Health degrees with a focus in Global Health at Tufts University School of Medicine. She has been a member of the Delta Omega Honorary Society in Public Health since 2010. She has over 10 years of experience in Public and Global Health, and has worked in Massachusetts, California, Ghana, Nepal, and the Philippines. Prior to medicine, she worked as a public health consultant for John Snow, Inc., and for their work on pandemic response, her team received the Manual Carballo Governor's Award for Excellence in Public Service in 2009. Her areas of interest include child health advocacy, global health, human rights, and social justice in medicine.

Phelps, Jazma, DO
Born and raised in North Carolina, Dr. Phelps completed her undergraduate years at NC State University where she majored with honors in biological sciences and minored in psychology. She then attended medical school at Edward Via College of Osteopathic Medicine in Virginia. Throughout medical school, Dr. Phelps was involved with several outreach and community programs. She then completed residency at Cone Health in Greensboro, NC to remain in the community that she was raised in. During residency, her area of concentration was obstetrics/women's health. She won

awards during residency for being an outstanding resident. With her love of Women's Health and OB, she then completed a one-year fellowship in OB/GYN at Cone Health. Dr. Phelps is a board-certified Family Medicine - Obstetrics physician. After fellowship, she joined the Emanate Health Family Medicine Program as a core faculty member. She chose Family Medicine because she can take care of all aspects of a patient and it entails all aspects of medicine. She plans on practicing full-scope family medicine. Dr. Phelps enjoys all aspects of teaching and mentoring. In her personal time she spends time with her family. She also enjoys traveling, shopping, reading, arts and crafts, and theatrical performances.

Qin, William, BS, MS
Will Qin is a medical student and graduate of Colby College (YOG 2017), where he majored in English and minored in Physics. During his time there, he also participated in the MaineGeneral Medical Center Summer Research Internship in 2016. His project at MaineGeneral with principal investigator Toru Matsubayashi consisted of a quality improvement project to curate data and analyze predictors of hospital readmission for congestive heart failure. The subsequent data was composed into a poster presentation for a Colby College research symposium. Qin also completed an MS degree at Touro University California in Medical Health Sciences, where his research project with faculty mentor Alan Miller consisted of collection of physiological data, administration of surveys, and experimental design to seek a statistically significant connection between heart rate variability and its relationship to perceived stress. As a medical student, Qin is passionate about using evidence and user feedback to create a useful and helpful tool to allow medical students to transition more smoothly into their clinical years.

Raabe, Michelle, BA
Michelle is a fourth-year medical student at the Medical College of Wisconsin-Central Wisconsin. She received her bachelor's degree in Biomedical Science at the University of Wisconsin- La Crosse in 2016. She is a member of the Onalaska Rotary Club and has worked with the Aging and Disability Resource Center to analyze transportation needs in the Wausau area.

Rajabirostami, Ehsan, MD
Ehsan Rajabirostami is an Internal Medicine specialist, working as a hospitalist in Sentara Albemarle Medical Center, a community hospital in Elizabeth city in North Carolina. Outside of clinical duties, he is a member of the readmission and quality improvement committee. He is trained in internal medicine and completed one year of a rheumatology fellowship. While serving as Chief Resident during his residency back home, Dr. Rajabirostami taught clinical reasoning courses to medical students. He conducted several morning reports and bedside teaching rounds for both residents and medical students. He was also involved in a couple of researches in medical education, including "How Does Patient Management Knowledge Integrate into an Illness Script?" Dr. Rajabirostami has been married to his wife for 15 years and has two daughters. He is a singer and enjoys listening to music. In his free time, he likes to get together with friends for a barbecue. His Myers-Briggs letters are ISTJ; his highest strength (VIA Character Strength's Survey) is "love of learning."

Raman, Charlene, BA
Charlene Raman is the Residency Program Administrator for the Geriatric Medicine and Hospice and Palliative Medicine Fellowships as well as the Radiation Oncology Residency at Kaiser Permanente Los Angeles Medical Center. She has been with the Graduate Medical Education department since October 2014. In addition to coordinating the education of 130+ residents and fellows, she has also served as the lead GMEC and CLER coordinator. She received her BA in Public Health with a minor in Global Poverty and Practice from U.C. Berkeley and began her career in education as a Teach for America Corps Member in Los Angeles teaching secondary science.

Rieves, Adam, MD
Adam Rieves, MS, MD, is a medical education fellow at Washington University in Saint Louis where he also works as an Emergency Medicine attending. He went to the University of Wisconsin Madison for undergraduate and graduate studies in biomedical engineering with a focus on patient safety and error reduction, prior to completing medical school at the same institution. He then completed

residency at Washington University in Saint Louis in Emergency Medicine and served as a chief resident during his fourth year. His focus during residency, in addition to emergency medicine, was leveraging technologic solutions to improve administrative workflows for residents & residency staff. His wife, Rachel, is a Newborn Medicine (Neonatology) Fellow also at Washington University and they have a son, Oliver, who was born in May 2019. In his spare time, Dr. Rieves enjoys cooking, exercising, and reading to his son.

Ring, Jeffrey, PhD
Dr. Jeffrey Ring is a clinical health psychologist, and author who knows culturally responsive integrated healthcare from the inside out. He is an executive leadership coach and assists leaders and teams in productive functioning toward effectiveness and competitive advantage. Jeffrey is a champion for healthcare practitioner vitality and is skilled in supporting teams in mindful reflection on creative approaches to self-care and wellness enhancement. For 19 years he served as the director of behavioral sciences and cultural medicine at the family medicine residency program at White Memorial Medical Center in East Los Angeles. There he worked in a multi-disciplinary team providing woven behavioral and primary care health services to a predominately Spanish-speaking underserved population. He is a clinical professor of family medicine at the Keck School of Medicine at the University of Southern California and has clinical experience with patients along the lifespan including geriatrics. During his career, Jeffrey has focused on the elimination of health disparities, with an emphasis on the role of medical education and the provision of outstanding care in underserved communities. He is the first author of Curriculum for Culturally Responsive Health Care: The Step-by-Step Guide for Cultural Competence Training, a book published by Radcliffe Oxford in 2008.

Rodriguez, Rebecca, MD
Dr. Rebecca Rodriguez is a third-year pediatric resident at Loma Linda University Children's Hospital, and currently serves as chief resident of the Primary Care Track. She completed her undergraduate education at St. Mary's University-San Antonio, earning a Bachelor of Science degree in Biological Studies. She returned to her hometown of El Paso, Texas for medical school, earning an MD at Texas Tech University Health Science Center-Paul L. Foster School of Medicine. Following residency, she plans to pursue work as a general practitioner in the outpatient setting, with special interests in underserved and minority populations.

Roque, Roman, DO/MPH Candidate
Roman Roque is a dual degree DO/MPH student from Touro University California with a concentration in Global Health. His experience in medical education started at UCLA's School of Public Health where he developed a seminar about the Social Determinants of Health for undergraduate students. He has also worked as the interim education coordinator for Stanford School of Medicine's Practice of Medicine doctoring courses. During medical school, he was a founding member of the Wellness, Academics, Resilience, and Mindfulness (WARM) committee at Touro University California where he helped incorporate protected time for student self-care and well-being into the core medical school curriculum.

Rosen, Zarah, MD Candidate
Zarah Rosen, MD Candidate, Class of 2021, UNLV School of Medicine, Las Vegas, Nevada, rosenz@unlv.nevada.edu. Zarah Rosen earned a BA in Integrative Biology with a concentration in Human Biology and Health Sciences from the University of California, Berkeley. Zarah is currently an MD Candidate at the UNLV School of Medicine in Las Vegas, Nevada and is pursuing a career in Obstetrics and Gynecology. She is particularly interested in researching methods to incorporate ultrasound skills into undergraduate medical education.

Rosenthal, Daniel
Daniel Rosenthal is Co-President of ReactGame.com, a cutting-edge organic chemistry game used by medical and pre-medical students across the US and in over 30 countries. ReactGame.com won two UC Berkeley Big Ideas awards and media, including NPR. He is working at UC Berkeley and UC San Francisco's Innovative Genomics Institute developing educational tools to teach how CRISPR, the revolutionary gene-editing tool, can be used to cure diseases. He holds a BA in Molecular and

Cell Biology / Immunology from UC Berkeley. His gastroenterological research was published in BioRXiv. A professional magician, Daniel teaches therapeutic magic to physicians. He founded MagicIsMedicine.org, which sends volunteer professional magicians to perform in hospitals across the US and internationally.

Ross, Paula, PhD
Dr. Paula Ross is the Administrative Director of the Michigan Medicine "Research. Innovation. Scholarship. Education." (RISE) initiative. She oversees the RISE unit operations and innovation project development. Prior to this role, Dr. Ross served as Director of Advancing Scholarship at the University of Michigan Medical School where she led efforts to develop and disseminate the school's education research and promote an infrastructure to produce high-quality scholarship. She earned a PhD in medical sociology with a specialty in qualitative research methods. She has extensive experience with qualitative research design using various methodologies and philosophical approaches. For over 15 years, she has qualitatively investigated topics in diversity in medicine, medical student professionalism, health care disparities, and veteran-centered care in both undergraduate and graduate medical education.

Rudnick, Melanie, MD
Melanie is a pediatric hospitalist at Connecticut Children's Medical Center and an Assistant Professor at the University of Connecticut School of Medicine. She completed her pediatric residency at Connecticut Children's Medical Center, where she initially became interested in developing tools to improve communication between patients and providers, specifically in the setting of Family Centered Rounds. She completed her pediatric hospital medicine fellowship at Children's Hospital Los Angeles at which time she enrolled in the Masters of Academic Medicine program at University of Southern California to gain more skills in the principles and execution of medical education research. Her current interests include family centered rounds and curriculum design at different levels of medical education. mrudnick@connecticutchildrens.org

Rush, Demaretta, MD
Dr. Demaretta Rush received her MD degree from the New York University School of Medicine in 1998. She went on to do her residency in anatomic and clinical pathology at the New York Hospital-Weill Cornell Center, in New York City, from 1998 to 2002. Dr. Rush later completed a year-long fellowship in gynecologic pathology the following year, also at the New York Hospital's Weill Cornell Center. In 2003, Dr. Rush moved to Florida to participate in a cytopathology fellowship at the University of Florida, and in 2004 she joined the faculty of the Department of Pathology at UF. Dr. Rush is board certified in anatomic and clinical pathology, as well as cytopathology. She is currently the program director of the anatomical and clinical pathology residency program at the University of Arizona/Banner University Medical Center in Tucson.

Sabeti, Sara, BS
Sara Sabeti is a second-year medical student at University of California, Irvine School of Medicine (UCISOM). Before entering medical school, Sara received a BS in Public Health Sciences from UCI. She is a founding member of UCISOM's Technology in Medicine group, a student-run group for collaborations in medical education, community service, and research projects that incorporate new and existing technologies.

Salcedo, Jennifer, MD, MPH, MPP
Dr. Salcedo is an Associate Professor and Residency Program Director in the Department of Obstetrics & Gynecology at the new University of Texas Rio Grande Valley. She completed her fellowship in family planning as well as a Master's in Public Policy at the University of California, Los Angeles, after finishing residency at the University of California, Irvine. Dr. Salcedo finished her Master's in Public Health through the Northwestern University Feinberg School of Medicine where she also completed her medical training. Dr. Salcedo has served on national committees for the North American Society for Pediatric & Adolescent Gynecology and the American Society for Reproductive Medicine, and currently serves on the Committee on Genetics for the American College of Obstetricians and Gynecologists. She has authored more than 28 peer-reviewed publications in reproductive

health. Most recently, Dr. Salcedo and her colleagues are excited to recruit for their recently approved Border & Underserved Obstetrics & Gynecology Leadership Development (BOLD) Track.

Sandowski, Samuel, MD
Dr. Samuel Sandowski is a Professor of Family Medicine at the Icahn School of Medicine at Mount Sinai (ISMMS) and the VP of Medical Education at Mount Sinai South Nassau. He also serves as the Residency Director at the ISMMS (South Nassau) Family Medicine Program. Dr. Sandowski graduated cum laude from the Technion Faculty of Medicine in Israel. After completing his family medicine residency at South Nassau Communities Hospital and a faculty development fellowship at the State University of New York Health Science Center, Brooklyn (SUNY Brooklyn), he served as Medical Director of the SUNY Brooklyn family medicine center. Dr. Sandowski subsequently returned to South Nassau to serve in his educational roles noted above, as well as the Associate Chair of the Department of Family Medicine and DIO for the hospital. His responsibilities include oversight of medical student education, graduate medical education, and CME for South Nassau. He has also served as a commission member of the NY State American Academy of Family Physicians' Leadership Commission and was Vice Chair of their Education Commission. Dr. Sandowski is board certified in family medicine and adolescent medicine. He has published several articles and book chapters, and co-edited the textbook, Primary Care.

Sapp, Jason, MD, MHPE
Jason E. Sapp, MD, MHPE, is Program Director in Internal Medicine at Tripler Army Medical Center in Honolulu. A graduate of West Point, Dr. Sapp received his MD and MHPE degrees from the Uniformed Services University in Bethesda, Maryland. He completed a fellowship in General Internal Medicine at Walter Reed National Military Medical Center, and is Board Certified in Internal Medicine.

Schaff, Pamela, MD
Pamela Schaff, MD, is Associate Professor of Medical Education, Family Medicine, and Pediatrics, and Director of the HEAL (Humanities, Ethics/Economics, Art, and the Law) Program at the Keck School of Medicine (KSOM) of the University of Southern California (USC). She graduated from Pomona College with a BA in English Literature and received her MD from the Mount Sinai School of Medicine. She has practiced pediatrics since completing her residency at Children's Hospital of Los Angeles and has taught at KSOM since 1986. She served as Director of the ICM program from 1996 to 2007, Assistant Dean for Curriculum from 2007 to 2012, and Associate Dean for Curriculum from 2012 until August 2016. Dr. Schaff served as Undergraduate Medical Education (UGME) chair for the Group on Educational Affairs (GEA) of the Association of American Medical Colleges (AAMC) from 2012-2014. She chaired the GEA's working group on professional identity formation from 2015-2018. Her current areas of investigation include professional identity formation, and the role of the arts and humanities in medical education. Dr. Schaff was awarded the Excellence in Teaching Award in 1998, 2002, 2005, and 2017, KSOM's Master Teacher Award in 2005, the USC-Mellon Mentoring Award in 2008, and USC's Remarkable Woman Award in 2010. She is currently completing her doctoral work in Literature and Creative Writing at USC.

Schreiber, Jacob, MS
Jacob Schreiber is an Instructor of Clinical Medical Education at the Keck School of Medicine of USC. He teaches research methodology courses in the Master of Academic Medicine program for the Department of Medical Education. Jacob holds a Master's Degree in Applied Anthropology and specializes in qualitative research methods. He also conducts institutional research and evaluation for programs in the department of medical education. Jacob's research focuses on the acculturation of physicians and the promotion of wellness for students, residents, physicians, and their patients through educational initiatives.

Schudel, Christine, MSW, MPH
Christine Schudel, MSW, MPH is the Program Manager of the Community Advocacy Primary Care (CAP) Outpatient Rotation at UCSF Benioff Children's Hospital Oakland. In this position, she is responsible for preparing future pediatricians to be community champions committed to achieving health equity in partnership with children and their families. Since starting this position in 2012,

Christine regularly co-facilitates small group seminars with Leanna Lewis, LCSW aimed at building participants capacity and skill around advocacy, cultural humility, community engagement, and health equity. From 2012-2016, Christine held the position of FQHC Program Coordinator at the Primary Care Clinic (PCC) and was responsible for implementing and managing health education programs such as Staying Health in Nature Everyday (SHINE) and the Family Navigation & Information Desk (FIND). She also held the position of Asthma Case Manager at the Primary Care Clinic from 2006-2010. She earned her Master's in social Welfare and Public Health from the University of California, Berkeley.

Scott, Kyle, BS
Kyle is a UF medical student and biomedical engineering graduate of the University of Virginia. Kyle is the Co-president of the Business and Entrepreneurship in Medicine (BEIM) interest group at UFCOM. He is passionate about bringing engineering innovation to the hospital setting and implementing systematic changes that both accelerate and democratize the innovation process.

Sellami, Nadia, PhD
Dr. Nadia Sellami is an Assistant Professor of Clinical Medical Education and the Associate Director of the Academic Support Program within the Keck School of Medicine of the University of Southern California. Her research interest focuses on innovative methods in medical education.

Shah, Nidhi, MD
Nidhi Shah, M.S., M.D. is currently a third-year resident of Obstetrics and Gynecology at New York Medical College, affiliated with Westchester Medical Center and Metropolitan Hospital. She completed her master's degree in biomedical sciences and medical training at New York Medical College. Dr. Shah has mentored her junior residents and medical students during residency receiving multiple teaching awards. She is currently interested in continuing a career in academic medicine, developing new and innovative ways to educate future obstetricians and gynecologists.

Shamoon, Michael, MD
Michael Shamoon is the 2018 Medical Education fellow for the Department of Emergency Medicine at LAC+USC. He graduated from NYU/Bellevue Residency in New York. Prior to medicine, Michael had a career in tech and web development and has been able to leverage these skills in the creation of free open-access medical education resources such as Core EM (https://coreem.net) and the community site FemInEM (https://feminem.org). Michael is currently pursuing a formal medical education fellowship and Master degree in order to be able to understand, evaluate and create innovative tools and platforms in the education space for medical learners.

Shoaib, Abdullah, MD
Abdullah Shoaib is a current trainee in Child Neurology (Fellowship) at UT Southwestern. He obtained his BS in Biomedical Engineering from Saint Louis University in St. Louis, MO. There, he also received his MD from the Saint Louis University School of Medicine. He completed his pediatrics residency at UT Southwestern in Dallas. His interests include medical education, wellness for medical trainees, quality improvement, and pediatric neurology.

Simon, Adria, MD
Adria Simon completed her residency training in 2019 at Temple University Hospital in the Department of Emergency Medicine. She currently works as a Medical Education Fellow at Temple in the Department of Emergency Medicine with a particular focus and interest on graduate medical education and developing multi-modal approaches to traditional didactic content.

Smith, Hunter Gibson, BS
Hunter Smith is a 4th year medical student at the University of North Carolina School of Medicine. Originally from Cary, North Carolina, Hunter attended the University of Notre Dame for his undergraduate degree in Chemical Engineering with a concentration in Biomolecular Engineering. In medical school, he has served as a peer counselor supporting and mentoring students for the UNC Advisory College. He has also been involved in the medical student government as Liaison for the

Asheville Branch Campus as well as currently an MS4 Co-President. In addition, Hunter is a member of the Gold Humanism Honor Society. He was selected as a Pediatric Medical School Chiefs where he teaches and leads more junior students. Currently, he is pursuing a Master of Public Health at the UNC.

Soza, Jose, DO
Born and raised in Los Angeles, CA, Jose Soza is proud to train and care for the community he grew up in. Instilled with a strong passion for family medicine, he partners with families in helping form preventative strategies, as well as helping them understand and manage complex diseases. It is with this mindset that he continues to collaborate with the community in hopes to help promote wellness and happiness.

Stephenson, Jason, MD
Jason Stephenson is an Associate Professor in the Department of Radiology at the University of Wisconsin School of Medicine and Public Health. His primary career interest is medical education across different levels of training with particular emphasis in trainee self-service. He participated in the creation of the new UW SMPH ForWard curriculum, including development and negotiation of the new policy framework for the curriculum and strategies to facilitate transition from the former Legacy curriculum to the ForWard curriculum. The ForWard curriculum incorporates several evidence-based interventions intended to improve student wellness, including a pass-fail grading system, blending of preclinical and clinical experiences, and group learning activities. Dr. Stephenson has also participated in the design, development, deployment, and primary management of the interdisciplinary Mind & Motion preclinical integrated block. This 10-week core course includes contributions from over 100 faculty members across more than twenty different basic science and clinical departments. These experiences give him the opportunity to provide insight into curriculum development, integration of policy recommendations from education scholarship, assessment design, learning module development, and learner engagement in novel education activities.

Stern, Alex, MD
Alex is a first-year resident in emergency medicine at LAC+USC. He was born and raised in Orange County, California and attended UC Berkeley as an undergraduate. He went to medical school at the Keck School of Medicine of USC.

Stevens, Paige, MD
Paige Stevens completed her pediatric residency at Children's Hospital Los Angeles and is currently serving as a Chief Resident during the 2019-2020 academic year. She graduated from the University of California, Riverside with a Bachelor of Science degree in Biology and from the Loma Linda University School of Medicine with her Doctor of Medicine degree. Her interests include medical education, simulation research, and providing whole-person patient care. During residency, she designed, implemented, and studied the efficacy of a spiritual care curriculum as part of completion of a specialized medical education track. She is planning to pursue a career in academic medicine in the subspecialty of Pediatric Critical Care.

Suchard, Jeffrey, MD
Jeffrey Suchard is the Associate Dean for Basic Science Education at the University of California Irvine School of Medicine. He is an Emergency Physician with additional specialization in Medical Toxicology. Within undergraduate medical education at UC Irvine, Dr. Suchard teaches Epidemiology and Biostatistics to the first-year students, and Medical Pharmacology to the second-year students.

Tabatabia, Ramin, MD, MACM
After completing his emergency medicine residency training at LAC+USC in 2010, Ramin Tabatabai worked in a variety of ED settings including both academic and community environments. He returned to LAC+USC as an Assistant Program Director in 2013 and has been serving as Program Director since 2018. He completed his Master in Academic Medicine at the University of Southern California in 2019. His academic interests focus on medical education and resident mental health and wellness.

Tames, Maria Lourdes, BS
Maria Lourdes Tames is a current third year Pharmacy Student at the University of Texas at Austin College of Pharmacy. She received her BS in Biology from Santa Clara University in 2014 and spent 3 years in a research laboratory at the prestigious Salk Institute before deciding to return to school to get her PharmD.

Tang, Irena, MD, FACP
Irena Tang is a second-year medical student at the California University of Science and Medicine School of Medicine (CUSM). She currently serves as the student representative for the school's Assessment and Evaluation Committee. She graduated from UC San Diego in 2017 with a BS in Human Biology and a minor in Mathematics. As an undergraduate, Tang worked as an instructional assistant in biology and volunteered as a camp counselor.

Tawfik, Huda, MD, PhD
Dr. Tawfik is an associate professor of pharmacology at Central Michigan University College of Medicine. She has been working in the medical education field for more than 10 years and has received one-year faculty development fellowship in medical education (theories and applications) from Medical College of Georgia. Dr. Tawfik has also developed and published educational activities using clinical reasoning models in several educational journals.

Thang, Christine, MD
Christine Thang, MD is a Clinical Instructor in Pediatrics at the UCLA David Geffen School of Medicine (DGSOM). As a faculty pediatrician in the UCLA Children's Health Center, Dr. Thang precepts medical students and pediatric resident trainees. Dr. Thang received her undergraduate and medical degrees from UCLA with AOA honors. She completed her residency training at UCLA and was awarded the Excellence in Teaching with Humanism Residents and Fellows Award. After residency, she served as a Chief Resident and was concurrently pursuing the DGSOM Medical Education Fellowship. She completed the first year of the program earning her Certificate in Innovations in Curriculum Design and Evaluation. She is currently enrolled in the second year of the program to earn her Fellowship in Medical Education Scholarship. Her interests include medical education, child advocacy, and preventive care. She is actively involved with the American Academy of Pediatrics (AAP) at the local and national levels. She is completing the second of three years of the AAP's Young Physicians Leadership Alliance, a training program designed to develop leadership skills and learning leadership principles, behaviors, and tools. Dr. Thang is dedicated to improving the care of all children and to teaching at the undergraduate and graduate medical education levels.

Thiagarajan, Kavitha, BA, MD Candidate
Kavitha Thiagarajan is a 4th year medical student at Keck School of Medicine of USC. She is applying to residency in Internal Medicine and interested in pursuing a fellowship in Allergy & Immunology.

Thomas, Joss, MBBS, MPH, FCCP, MHA
Joss Thomas MBBS, MPH, FCCP, MHA is currently an Associate Professor in the Department of Anesthesiology at the University of Minnesota. He is a dual fellowship-trained faculty in Pediatric Anesthesia and Critical Care with a special interest in neurocritical care. He practices both Pediatric Anesthesia and Adult Critical Care. Joss worked at the University of Iowa as Director of Pediatric Anesthesia and University of Iowa Hospital Director for Sedation services from 2006 to 2015. He was also an investigator in the multinational GAS study Consortium that assessed Anesthesia toxicity in Pediatric patients. Additionally, he joined the Department of Anesthesiology, the University of Minnesota as Vice-Chair of Clinical Operations and Director of Scheduling Services, and initiated the Faculty Development Program in 2015. As Vice-Chair of Clinical Operations, he developed a transparent, equitable and fair electronic scheduling system for both faculty and residents with data gathering capabilities. Since Joss became the Vice-Chair of Education, he has been involved in changing the resident interview process to a completely electronic version with the help of the Graduate Medical Education Office. He has worked with the office to initiate the "Situational Judgement Test" for incoming Resident Candidates. Joss is currently in the process of revamping the

data collection system and is working with IT to create a dashboard that amalgamates all data for residency training.

Thompson, Michelle, MD, MACM
Michelle Thompson, MD, is the director of the Pediatric Residency Program at Children's Hospital Los Angeles (CHLA) and an Associate Professor in the Department of Pediatrics at the Keck School of Medicine of the University of Southern California. She is Board-Certified in pediatrics and a member of the American Academy of Pediatrics (AAP) and the Academic Pediatric Association (APA). Dr. Thompson has instructed and mentored hundreds of students, residents and graduates of the program at CHLA, and has also published and developed articles and academic resources on a wide range of pediatric education topics. Dr. Thompson serves on the executive leadership team of the General Pediatric Service (GPS) at CHLA, co-directs the residency program's education track. She previously served as co-chair of Region 9 of the APA and is a member of its Education Executive Committee and Membership, Diversity and Inclusion Executive Committee. Dr. Thompson is a recipient of CHLA's Victor E. Stork Award, Community Teaching Award, Barbara M. Korsch Award for Excellence in Medical Education and Philip E. Rothman Teaching Award.

Tran, Alexander, BS
The power of guided reflection is something that can be useful for students from all sorts of backgrounds in different aspects of life. As a prior swimmer, this was something we did regularly to ground ourselves and make sure that we were able to do the best that we could by allowing ourselves to stop and think deeply about what we were doing. Alexander Tran has been a participant of guided reflections with athletics and as a medical student, and now with the honor of being a reflection group leader, he is excited to share what is being done at the University of Utah with other students.

Tran, Tammy, BS
Tammy Tran is a second-year medical student at the UC Irvine School of Medicine where she pursues her interest in medicine, as well as leadership development, technology, and music. Tammy has coordinated several annual health and technology conferences and received the UCISOM medical education leader award in 2019 as a first-year student. She also participated in the 2018 UCSD Health Hackathon, where her team tied for second place. This same group of enterprising students went on to create the Technology in Medicine Interest Group at UCI, where Tammy co-led the creation of the UCISOM Makerspace. Before her time at UCI, Tammy spent a good portion of her time in ophthalmology research at UCSD, contributing articles to multiple research publications. She has continued research at UCI; her current project involves a medical application of machine learning. In her free time, Tammy pursues her passion for music as a vocalist for the medical student-formed group called the "IT Band," while also playing piano or violin at nursing homes. In 2019, she was nominated Best Musician by her fellow medical students.

Velez-Dalla Tor, Maili, MD, FAAFP
Dr. Dalla Tor was born in San Juan, Puerto Rico and moved to Southern California at the age of nine. She attended the Drew/UCLA Medical Education Program. During her residency training at the Memorial Family Medicine Residency Program in Long Beach, CA, she was Co-Chief for both Quality Assurance and Gynecology. She is dually board-certified in Family Medicine and Hospice and Palliative Medicine. After completing her residency, Dr. Dalla Tor worked at Kaiser Permanente and then transitioned into academics. She joined the PIH Health Family Medicine Residency Program as faculty, chaired the Clinical Competency Committee (CCC) and helped to develop their Chronic Disease and Palliative Care Track. Dr. Dalla Tor also worked as an Associate Program Director at the Pomona Valley Family Medicine Residency Program prior to joining the Emanate Health Family Medicine Residency Program in 2017 as the Associate Program Director. She transitioned into the role of Program Director during the fall of 2018. Dr. Dalla Tor enjoys teaching medical students and residents and has a special interest in resident and physician wellness, curriculum development, pipeline programs/mentorship and diversity, community medicine, procedural training and caring for patients and families of all ages. She is excited to build a residency committed to academic excellence, innovation and service through compassionate, quality care.

Villa, Stephen, MD
Stephen Villa is originally from Phoenix, Arizona and is currently attending medical school at UC San Francisco. He recently completed his emergency medicine residency at UC San Francisco/San Francisco General Hospital. He works clinically both at UCLA Ronald Reagan and Olive-View-UCLA hospitals. Outside of clinical duties, he is directly involved with resident and medical student education in various capacities including conference, skills labs, and simulation labs. In addition to bedside teaching, Stephen is passionate about expanding diversity with emergency medicine and mentorship.

Vincent, Dale, MD, MPH, MACM
Dale S. Vincent, MD, MPH, MACM is a former Internal Medicine Program Director and Associate Clinical Professor of Medicine at the University of Hawaii John A. Burns School of Medicine in Honolulu. After graduating from West Point, he received his MD degree from the University of Texas Southwestern Medical School at Dallas, MPH from the Uniformed Services University in Bethesda, Maryland, and MACM from the University of Southern California. He is Board Certified in Internal Medicine and Geriatrics, and has completed a Fellowship in General Internal Medicine.

Walker, Valencia, MD, MPH
As an Assistant Dean of Equity and Diversity Inclusion for the David Geffen School of Medicine (DGSOM) at UCLA, Dr. Walker strongly advocates for diversity, equity and inclusion efforts. Prior to the appointment as Assistant Dean, she served as the co-chair for the DGSOM Department of Pediatrics – Pediatric Faculty Committee on Diversity. In that role, she helped organize and present on a wide range of activities and programs to educate and support our department, including topics addressing various forms of implicit bias in medicine, immigration policies and barriers to health care as well as systematic drivers of health disparities. In 2016, she completed a “Train the Trainer” course on unconscious bias at Harvard Medical School through the Cook Ross Institute and received her certification to provide unconscious bias training to health care professionals. In 2014, with the assistance of Dr. Minh Tran, Dr. Walker created a diversity training course (UCLA IDEA Diversity) for faculty and staff that utilizes Intergroup Dialogue, a nationally-recognized and validated tool for restorative social justice.

Wang, Jami, BA
Jami graduated from U.C. Berkeley with honors in Public Health. As an instructor for Stanford University School of Medicine's "Health Disparities and Research" course and U.C. Berkeley's "Pre-Health Course", Jami has played an active role in curriculum development. In her U.C. Berkeley honors thesis, Jami advocated empowering young girls to pursue STEM fields through educational outreach programs. As a second-year medical student at Western University of Health Sciences, she serves as the Curriculum Representative for her class and delegate in the California Medical Association. Outside of school, Jami is working on her startup- React! the Organic Chemistry Game, to rethink the delivery of medical education.

Warren, Jonathan, BS
Jonathan Warren is a fourth-year medical student with experience in both leadership and education. He is excited to not only pursue a career in emergency medicine following his graduation from medical school, but to continue making advancements in medical education as well. As a medical student, he has furthered medical education as an anatomy tutor, an instructor for clinical foundations course, and recently has been elected to a teaching fellowship position within the David Geffen School of Medicine. Jonathan has also utilized his talents to support the free online database, WikEM, which provides information to practicing emergency physicians. Working as a co-investigator, he has taken the lead on a project directed at identifying the ability of vital sign abnormalities to predict the need for emergent intervention in patients with penetrating trauma. Jonathan has also developed his leadership skills serving as the representative of the medical school campus to the larger Graduate Student Association body. Furthermore, he has pursued both his interest in physician well-being and photography to found and serve as chief editor for Art of Emergency Medicine, an online art blog dedicated to showcasing the creative side of emergency professionals. From his collective experiences, Jonathan has learned the importance of dedication, perseverance, and communication in achieving goals and promoting medical education.

Warshel, McKenzie
McKenzie Warshel is a second-year medical student at Lake Erie College of Osteopathic Medicine. Prior to medical school, she received her BA from the University of Pittsburgh in Neuroscience and worked as a counselor at the The Women's Help Center, a non-profit domestic violence agency. She is interested in pediatric oncology.

Wells, Traci, PhD
Dr. Wells earned her PhD from the University of California, Los Angeles. She is the Director of Education for the Global Health Program, and also serves as an Adjunct Assistant Professor at UCLA's David Geffen School of Medicine. For this workshop, she will also represent the Bellagio Global Health Education Initiative. Dr. Wells completed doctoral studies at UCLA in International and Comparative Education, and is a two-time Fulbright alumnus, with activities in both Mali and India. Her interests in medical education range from developing comprehensive and innovative pre-departure ethics and cultural humility training for global health electives, to pairing students with mentors in their area of interest(s), and finding creative ways to evaluate and strengthen global health programs for medical students. In particular, Dr. Wells has developed expertise in using reflective writing to assess student learning, from ACGME competencies to transformative learning that often occurs when students rotate in settings that are drastically different from their own. Her recent global health fieldwork has included serving as a research consultant in Mali and Niger, working with both Sesame Workshop and World Vision.

White, Andrew, MS4
Andrew White is a 4th year medical student at SUNY Downstate College of Medicine. He developed a passion for healthcare simulation while working at the New York Simulation Center for the Health Sciences prior to attending medical school. He became involved in simulation and medical education early into his training at SUNY Downstate when he joined the Medical Education Pathway and became a member of the Center for Healthcare Simulation Steering Committee. He furthered the presence of simulation at Downstate by founding the SUNY Downstate Student Simulation Committee (SSC). Under Andrew's leadership, the SSC has hosted two 'SIMathons' teaching basic life support techniques, IV and phlebotomy, and heart and lung auscultation – which were attended by over 40 medical, nursing, and physician assistant students.

Whitehurst, Daniel, BS
Daniel Whitehurst is a third-year medical student at Vanderbilt University School of Medicine in Nashville, TN. He is co-president of the student-run point of care ultrasound (POCUS) interest group at Vanderbilt School of Medicine.

Williams, Alison, DDS, MBA
Dr. Williams is an independent strategy consultant for entrepreneurs and startups, practicing dental surgery locum tenens after twelve years in private practice. Otherwise, spending time in nature, surfing and traveling off the grid fills his time.

Williams, Taylor, BS
Taylor Williams is a second-year medical student at the Medical College of Wisconsin in Milwaukee. After earning her Bachelor of Science degree in Biological Sciences from Colorado State University in 2016, she moved to Washington state and worked as a medical scribe for Providence Medical Group Internal Medicine and Pediatric Pulmonology and Cystic Fibrosis clinics. In 2018, Taylor commissioned into the US Army as a second lieutenant and moved to Milwaukee to begin her medical education. She endeavors to attend Emergency Medicine residency and serve as an Army physician for the foreseeable future.

Winter, Stephen, MD
Steve is a graduate of the University of Michigan and University of Chicago Pritzker School of Medicine. He has conducted graduate-level research in biophysics, completed a Fellowship for Human-Centered Design in Healthcare at the University of Chicago, and worked as a software

consultant for the international consultancy ThoughtWorks. He is currently a PGY2 Resident in Radiology at University of Utah Health.

Wise, Diana, BA
Diana Wise is a second-year medical student at Stanford University School of Medicine pursuing a concentration in community health and women's health and sex differences. She received her BA from Dartmouth College in 2015, double-majoring in Neuroscience and Environmental Studies, and completed a post-baccalaureate premedical program at the University of Virginia. Prior to medical school, she acted as the Global Health Intern at the Dickey Center for International Understanding at Dartmouth College and conducted research on pediatric and neonatal health disparities in California and Guatemala and research ethics training in Southeast Asia. At Stanford, she is currently the president of the Organization for Global Health, co-director of the Ob/Gyn Student Interest Group and co-director of the Hepatology Clinic at the student-run Pacific Free Clinic. Diana spent this past summer conducting research on gender disparities in access to surgical care at a state-hospital in northern Namibia. She hopes to continue academic and clinical work addressing health disparities in underserved populations both domestically and internationally.

Wisk, Lauren, PhD
Dr. Lauren Wisk is an Assistant Professor of Medicine in the Division of General Internal Medicine & Health Services Research (HSR) at the David Geffen School of Medicine at the University of California, Los Angeles (UCLA); formerly an Assistant Professor of Pediatrics at Harvard Medical School (HMS) and in the Division of Adolescent/Young Adult Medicine at Boston Children's Hospital (BCH). A health services researcher and methodologist, her research focuses on understanding health and health services use among children and families, particularly those with chronic medical conditions, across the life course. Dr. Wisk is the course director for "Intro to Statistics for HSR" – required for all first year fellows in the National Clinician Scholars Program at UCLA. At HMS/BCH, she was the Summer Research Experience Director and Research/MPH Track Director for the Adolescent Medicine Fellowship where she developed new research methods curriculum; additionally, she was the course director "Introductory Biostatistics" as part of the Leadership Education in Adolescent Health (LEAH) Fellowship curriculum. In 2018, she received the Estherann Grace Teaching Award from the Division of Adolescent/Young Adult Medicine in recognition of outstanding teaching for the Division and LEAH program. She also won the Graduate Student Peer Mentor Award from the Multicultural Graduate Network, Graduate School Collaboration, and University of Wisconsin Graduate School in 2013.

Wohlleber, Margaret, BA
Margaret is a fourth-year medical student at SUNY Downstate College of Medicine in Brooklyn, New York. She received a bachelor's degree in Philosophy at New York University and has a particular interest in the humanities and academic/creative writing in medicine. She is currently pursuing a residency and career in Psychiatry.

Wolniewicz, Teresa, Medical Student
Teresa Wolniewicz is a 6th year student of the Faculty of Medicine at the Medical University of Warsaw, constantly expanding her knowledge in the field of modern medical education. She is a recipient of the Rector's Scholarship Award for best students, member of the International Student Organization, IFMSA, and the Students' Scientific Society under the Department of Dermatology. Teresa is also an active participant of many medical conferences, as well as author or co-author of several scientific papers published in professional journals. She took part in an Erasmus exchange at the Medical University of University of Ljubljana of Slovenia, as well as many other exchange programs across Europe. In the future, she intends to encourage research in the field of healthcare professional education.

Wong, Cynthis, BS
During Cynthis' undergraduate career, she actively worked within the teaching and mentoring space. Working as a teaching assistant for a Microbiology class and as a chemistry tutor required her to speak with hundreds of students and adapt to multitudes of different learning and communication

styles. Cynthis held large exam review sessions for up to 80 students at a time, in addition to one-on-one tutoring sessions. She quickly had to learn to become an adaptable and nuanced speaker, presenting difficult concepts and answering spontaneous questions in a clear and concise manner. Furthermore, when she assumed the role of a lead tutor, she took responsibility for training new tutors in a center-wide orientation, and in managing student and tutor complaints. This further reinforced her communication skills as she worked to lead and inspire students and fellow colleagues. It is from these experiences where she realized the value that near-peer teaching had on her own learning, both as a tutor and as a tutee. Cynthis had a unique opportunity to implement various learning strategies as a tutor and TA, and to think critically about best learning practices. Lastly, the skillsets she has built from these experiences have aided her in communicating about her research in various contexts, for instance, presenting at symposiums, sharing her progress in lab meetings where other scientists often ask poignant questions, or while having casual but crucial conversations with other lab members in our day-to-day work.

Wright, Erika, PhD
Erika Wright holds a PhD in English from the University of Southern California. She has appointments as a Lecturer in the English Department (University Park Campus) and as an Associate Professor of Medical Education at KSOM. She is the Associate Director of the HEAL program at USC. She co-teaches the professional identity formation workshop for the Family Medicine clerkship and the Medical Arts and Humanities selective at USC with Dr. Pamela Schaff. She has published on medicine and literature, health and disease, graduate education, and medical professionalism.

Wu, Velyn, MD
Velyn Wu, MD FAAFP CAQSM is an associate program director at the University of Florida Family Medicine Residency Program. She earned her medical degree from the University of South Florida and completed a family medicine residency and primary care sports medicine fellowship at Halifax Health in Daytona Beach, FL. After graduating from the Halifax Health Sports Medicine Fellowship, she practiced in Jacksonville, FL until she decided to pursue her passion for educating future family physicians as the assistant director for sports medicine at Lynchburg Family Medicine Residency Program. She desires to inspire future generations of family physicians to lead in providing individualized, comprehensive and cost-conscious health care to the communities that they serve. She enjoys participating in many athletic pursuits including triathlons and soccer. She recently has discovered the joy and challenge of Olympic style fencing. She also likes to spend time in her garden growing vegetables to give away to her friends.

Yang, Katie, MS
Katie Yang is the Radiology Education Research and Curriculum Program Manager for the Department of Radiology at the University of Wisconsin-Madison School of Medicine and Public Health. She is also the Basic Science Assistant Block Leader for the preclinical medical student course, Mind and Motion, which serves as the foundational neuroscience, neurology, psychiatry, and musculoskeletal physiology course within the curriculum. Katie's work has focused primarily on maximizing student engagement through use of user experience principles and methodology. She received her BA in Psychology from the University of Pennsylvania and her Masters in Neuroscience from the University of Wisconsin-Madison.

Yanofsky, Samuel
Samuel D. Yanofsky serves as Director Faculty Development in the Department of Anesthesiology Critical Care Medicine at Children's Hospital Los Angeles. He is a graduate of McGill University, Montréal, Québec (Baccalaureate of Science in Physiology) and St. Louis University Medical School. He completed his residency in Anesthesiology at University of Connecticut Health Center followed by a two-year fellowship in Pediatric Anesthesiology and Critical Care Medicine at the Children's Hospital of Philadelphia. In 2004, Dr. Yanofsky received a Master of Science in Education from the USC Rossier School of Education. His areas of research interests are in assessment and evaluation related to the ACGME milestones for Anesthesiology. He teaches leadership within the Master of Academic Medicine program. On a national level, he has serves as a member of the board of directors of the Society for Education in Anesthesia (SEA) and is a member of the education

committee for the SEA and the Society for Pediatric Anesthesiology (SPA). Dr. Yanofsky has provided numerous educational workshops and presentations for his anesthesia colleagues including sessions for SEA, SPA and ACGME including topics on teaching the ACGME competencies, career development and well-being for the academic anesthesiologist.

Yeh, Michael, DO
Michael Yeh is a 3rd year family medicine resident who has a strong drive for preventative medicine. He recognizes the national deficit in exclusive breastfeeding and hopes to tackle this problem through his research locally.

Yeh, Paul, DO
Born and raised in Southern California, Dr. Paul Yeh received his BA in Biology from Pomona College. He obtained a BFA in motion graphic design from Art Center College of Design in Pasadena. He worked for 8 years as a graphic artist before obtaining his DO degree from Western University of Health Sciences. He continued his training in Los Angeles in Family Medicine at White Memorial. His focus is on providing culturally competent, high-quality healthcare for his patients.

Zamberg, Ido, MD
Dr. Ido Zamberg is the Clinical Skills Coordinator of the Clinical Skills Program of the faculty of medicine at the University of Geneva, Switzerland. He is also a fourth-year medical resident in internal medicine at the University Hospital of Geneva, Switzerland, with a clinical interest in critical care Nephrology. He is planning on pursing a triple specialization in Internal medicine, Anesthesiology and Nephrology. In addition, Dr. Zamberg has 14 years of computer science working experience and holds a computer science diploma from the IDF Mamram programming school, where he served as Senior Oracle Database Administrator and Optimization Specialist, as well as a Senior Mobile Application Developer. He is passionate about medical education, especially about clinical skills education. His goal is to promote, develop, and introduce innovative ideas into the clinical skills' education curriculum.

Zapata, Geny, PsyD
Geny Zapata, PsyD is a health psychologist who serves as Director of Behavioral Sciences at Adventist Health White Memorial Medical Center Family Medicine Residency Program. Dr. Zapata earned her Doctorate in Clinical-Community Psychology from the University of La Verne and is a licensed psychologist in California. She completed a two-year American Psychological Association (APA) accredited fellowship in Behavioral Medicine and In-patient Psychiatry at Harbor-UCLA Medical Center and an APA accredited internship at Children's Institute Incorporated. Dr. Zapata is also a CAPIC/MHSA grant recipient for her work with underserved populations. Additionally, she serves as a member of the board at the Reiss-Davis Graduate Center for Child Development and Psychotherapy. She has worked in hospital and clinical community settings providing culturally and linguistically appropriate mental health services to populations of diverse backgrounds. She provides clinical supervision, consultation, education to doctoral and master level medical and mental health providers.

Zehra, Tabassum, PhD
Dr. Tabassum Zehra is an Assistant Professor for the Department for Educational Development at Aga Khan University (AKU). She holds more than 10 years of experience working at the Aga Khan University and College of Physicians and Surgeons Pakistan (CPSP). Dr. Zehra received her PhD in Medical Education from University Ambrosiana, Italy in 2018. She is also the first graduate of the Master of Health Professions Education Program (MHPE) offered by AKU. Currently, Dr. Zehra serves as the Program Director of the Master of Health Professions Education Program (MHPE), Chair Faculty Development Workshop Series and Director Residents as Educators Program at AKU. She is involved in teaching at an international level and has initiated the series of workshops on 'Clinical Supervision' for faculty development at Aga Khan University.

Zhu, Jessica, BS
Jessica Zhu's primary research goal in medical education is to promote well-being and curtail burnout through reflective practices. Her long-term goal is to develop a four-year curriculum that allows

students to build appropriate coping mechanisms to ultimately provide the best care possible. As an undergraduate student at a Jesuit institution, she was impressed by the ability of guided reflection to create a supportive community that promotes well-being, professional development, and a sense of purpose. Using her experience of weekly reflection at Boston College, she created a successful curriculum for first year medical students at the University of Utah School of Medicine tailored to three themes: community, purpose, and self-identity. Ms. Zhu hopes to share this curriculum with other medical schools.

Thank You to Those Who Made the Conference Possible

We would like to thank the following people for their invaluable help with planning the meeting, reviewing abstracts, serving as moderators, and facilitators. This meeting depends on the many volunteers' willingness to devote their time and expertise to making IME possible. Special thanks go to Lisa Delgado, Program Director of KSOM Professional Development, along with Teresa Ball, Bernadette Santiago, Mayra Angulo, Lysandro Valenzuela, and Kimberly Ludolph, our support team from the office of Continuing Medical Education, who oversee marketing, registration, and facilities management. We'd also like to thank our own wonderful staff, Pam Teplitz, Cris Argosino, Vanessa Arias-Herrera, and Alexa Wong, as well as all the hardworking session hosts who ensure that our conference runs smoothly.

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♦ **Course Overview and Objectives** ♦

Innovations in Medical Education 2020 Conference

COURSE DESCRIPTION

The Department of Medical Education at the University of Southern California presents our 17th annual Innovations in Medical Education (IME) Conference on Friday and Saturday, February 14 and 15, 2020. The IME Conference joins together a growing community of educators, leaders, scholars, and learners working together to promote change through innovation in health professions education. Our goal is to move education in the health professions toward a higher level of excellence and wellbeing by providing a forum for sharing innovative ideas and educational innovations.

We have prepared an exciting and stimulating program with an outstanding plenary speaker and interactive conference workshops chosen to enhance participant skills related to teaching, leadership, educational scholarship, professional development, and promotion of wellbeing. Multiple oral presentations and poster sessions provide many opportunities for networking and collaboration in a friendly atmosphere.

EDUCATIONAL OBJECTIVES

At the conclusion of the program the participant will be able to:

- Utilize evidence-based principles of teaching, leading, mentoring, and educational scholarship in your work within health professions' education.
- Identify techniques for enhancing the learning environment and the well-being of each of us within health professions' education.
- Transfer cool ideas and innovations learned about at IME into your own health professions' setting.

ACCREDITATION STATEMENT

The Keck School of Medicine of the University of Southern California is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

CREDIT DESIGNATION

PRE-CONFERENCE WORKSHOP CREDIT DESIGNATION: The Keck School of Medicine of the University of Southern California designates this live activity for a maximum of 2.0 *AMA PRA Category 1 Credits™.* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

2-DAY IME CONFERENCE CREDIT DESIGNATION: The Keck School of Medicine of the University of Southern California designates this live activity for a maximum of 13.25 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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♦ **Core Competencies** ♦

Innovations in Medical Education 2020 Conference

The American Board of Medical Specialties (ABMS) and the Accreditation Council of Graduate Medical Education (ACGME) have embarked on a joint initiative to quantify and evaluate a set of 6 physician core competencies by which the individual physician will be measured for Residency Certification, Board Certification and more recently, Maintenance of Certification (MOC).

It is the intent of the Office of Continuing Medical Education at the Keck School of Medicine of USC to develop our CME activities in the context of desirable physician attributes.

The following are a list of Core Competencies that will be covered in one or more of the presentations at this symposium.

- **Patient Care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

- **Medical Knowledge** about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.

- **Practice-Based Learning and Improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.

- **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals.

- **Professionalism**, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

- **Systems-Based Practice**, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

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CLAIMING CME / CEU?

Next week you will be receiving an email containing detailed instructions about claiming & printing your certificate.

Step 1: Log-In

Visit **https://cmetracker.net/KECKUSC/Archive** & click on the certification button of the program you attended. Log-in using your email and password.

Step 2: Complete Online Evaluation

Feedback is important which is why we strongly encourage all attendees to participate in the online evaluation.

Step 3: Download & Print Certificate

By clicking submit you will be prompted to enter your participation credits, download & print your certificate.

For questions or concerns please contact the Keck School of Medicine's Office of CME at 323-442-2555.

Cultural and Linguistic Competence Resources for Health Care Providers

State and Federal Law

Federal Civil Rights Act: 42 U.S. Code § 1981 - Equal rights under the law

(a) Statement of equal rights. All persons within the jurisdiction of the United States shall have the same right in every State and Territory to make and enforce contracts, to sue, be parties, give evidence, and to the full and equal benefit of all laws and proceedings for the security of persons and property as is enjoyed by white citizens, and shall be subject to like punishment, pains, penalties, taxes, licenses, and exactions of every kind, and to no other. **(b) "Make and enforce contracts" defined**. For purposes of this section, the term "make and enforce contracts" includes the making, performance, modification, and termination of contracts, and the enjoyment of all benefits, privileges, terms, and conditions of the contractual relationship. **(c) Protection against impairment**. The rights protected by this section are protected against impairment by nongovernmental discrimination and impairment under color of State law
https://www.law.cornell.edu/uscode/text/42/1981

Executive Order 13166

On August 11, 2000, the President signed Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency". The Executive Order requires Federal agencies to examine the services they provide, identify any need for services to those with limited English proficiency (LEP), and develop and implement a system to provide those services so LEP persons can have meaningful access to them. It is expected that agency plans will provide for such meaningful access consistent with, and without unduly burdening, the fundamental mission of the agency. The Executive Order also requires that the Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.
http://www.justice.gov/crt/executive-order-13166

Dymally-Alatorre Bilingual Services Act of California

The Dymally–Alatorre Bilingual Services Act (California Government Code Section 7290 et. Seq.) was signed into law in 1973, to eliminate language barriers that preclude people of our State, who either because they do not speak or write English or because their primary language is other than English, from having equal access to public services. This Act mandates that State and local agencies directly involved in the furnishing of information or the rendering of services to the public must in specifically prescribed situations employ a sufficient number of qualified bilingual persons in public contact positions to ensure the provision of information and services to the public in the language of the non-English speaking people.
http://www.bsa.ca.gov/pdfs/reports/99110.pdf

Cultural and Linguistic Competence

Center for Effective Collaboration and Practice

It is the mission of the Center for Effective Collaboration and Practice to support and promote a reoriented national preparedness to foster the development and the adjustment of children with or at risk of developing serious emotional disturbance. To achieve that goal, the Center is dedicated to a policy of collaboration at Federal, state, and local levels that contributes to and facilitates the production, exchange, and use of knowledge about effective practices.
http://cecp.air.org/

National Center for Cultural Competence (NCCC)

The mission of the National Center for Cultural Competence (NCCC) is to increase the capacity of health and mental health programs to design, implement, and evaluate culturally and linguistically competent service delivery systems to address growing diversity, persistent disparities, and to promote health and mental health equity.
http://nccc.georgetown.edu/index.html

Limited English Proficiency (LEP)

Limited English Proficiency promotes a positive and cooperative understanding of the importance of language access to federally conducted and federally assisted programs. This site acts as a clearinghouse, providing and linking to information, tools, and technical assistance regarding limited English proficiency and language services for federal agencies, recipients of federal funds, users of federal programs and federally assisted programs, and other stakeholders .http://www.lep.gov/

DiversityRx

The purpose of DiversityRx is to improve the accessibility and quality of health care for minority, immigrant, and indigenous communities. We support those who develop and provide health services that are responsive to the cultural and linguistic differences presented by diverse populations. http://www.diversityrx.o

National Alliance for Hispanic Health

Mission is to improve the health and well being of Hispanics. The Alliance informs consumers, supports health and human service providers in the delivery of quality care, improves the science base for accurate decision making by promoting better and more inclusive research, promotes appropriate use of technology, insures accountability, advocates on behalf of Hispanics, and promotes philanthropy. http://www.hispanichealth.org/

National Center on Minority Health and Health Disparities

The mission is to promote minority health and to lead, coordinate, support, and assess the NIH effort to reduce and eliminate health disparities. NCMHD will conduct and support basic, clinical, social, and behavioral research, promote research infrastructure and training, foster emerging programs, disseminate information, and reach out to minority and other health disparity communities. http://www.nih.gov/about/almanac/organization/NCMHD.htm

National Council on Interpreting in Health Care

A multidisciplinary organization based in the United States whose mission is to promote culturally competent professional health care interpreting as a means to support equal access to health care for individuals with limited English proficiency. http://www.ncihc.org/

Think Cultural Health

The goal of Think Cultural Health is to Advance Health Equity at Every Point of Contact through the development and promotion of culturally and linguistically appropriate services. Think Cultural Health provides continuing education programs that are designed to help individuals at all levels and in all disciplines promote health and health equity.
https://www.thinkculturalhealth.hhs.gov/content/continuinged.asp

Cultural Guides and Assessment Tools

The Provider's Guide to Quality & Culture (not a U.S Website)

The quality of the patient-provider interaction has a profound impact on the ability of patients to communicate symptoms to their provider and to adhere to recommended treatment. It also has an impact on the patient's feelings about being respected (or disrespected) as an

individual, a member of a family, and a member of a cultural group.

Cultural competence begins with an honest desire not to allow biases to keep us from treating every individual with respect. It requires an honest assessment of our positive and negative assumptions about others. An organization can help its health care professionals begin to gain cultural competence through formal training, but for most people cultural competence takes consistent individual practice over time.
http://erc.msh.org/mainpage.cfm?file=4.0.htm&module=provider&language=English&ggroup=&mgroup=

Guide to Culturally Competent Health Care

Be prepared for the culturally rich and diverse world of healthcare. This concise, easy-to read handbook prepares you to relate to individuals from different cultures. This guide explores 34 different cultures and the issues to be sensitive to; including cultural variations regarding personal space, dietary preferences, communication, symptom management, activities of daily living, and religious and health practices.
http://site.ebrary.com/lib/uscisd/reader.action?docID=10865357&ppg=1

Assessing Change: Evaluating Cultural Competence Education and Training

The AAMC commissioned an expert panel to review cultural competence studies that measured learner changes in attitudes, knowledge, and skills. This guide, which is based on the panel's findings, provides these resources for educators and researchers an inventory of the research studies that assess the outcomes of cultural competence education and training, four recommended strategies to advance the research and evaluation, a Cultural Competence Assessment Tool Checklist, along with a guide to using the tool, to help educators and research measure facets of cultural competence in published assessment tools and an overview of three evaluation approaches for curriculum development and evaluation. Assessing Change: Evaluating Cultural Competence Education and Training

AAMC Tool for Assessing Cultural Competence Training

With increasing diversity in the U.S. population and strong evidence of disparities in health care, it is critically important that health care professionals are specifically educated on how their own and their patients' demographic (e.g., gender, income, race and ethnicity, etc.) and cultural (e.g., language, religion, etc.) factors influence health, health care delivery and health behaviors. In 2000, the Liaison Committee on Medical Education (LCME) introduced two standards about cultural competence that inspired medical schools to introduce cultural competence education into the undergraduate curriculum. TACCT will help in that effort. TACCT is a self-administered assessment tool that can be used by medical schools to examine all components of the entire medical school curriculum. TACCT enables schools to identify gaps and redundancies in their curricula, which will enable schools to make the best use of opportunities and resources. The TACCT can be used for both traditional and problem-based curricula.
Tool for Assessing Cultural Competence Training (TACCT) - PDF Version

Health Disparities

AMA Racial/Ethnic Health Care Disparities

Recent studies have shown that despite the steady improvements in the overall health of the United States, racial and ethnic minorities experience a lower quality of health services and are less likely to receive routine medical procedures and have higher rates of morbidity and mortality than non-minorities. Disparities in health care exist even when controlling for gender, condition, age and socio-economic status. The American Medical Association provides links for activities to eliminate health disparities, commission to end health care disparities, and research finding and recommendations. As well as an inspirational program for new generation of physicians called Doctors Back to School. http://www.ama-assn.org/ama/pub/physician-resources/public-health/eliminating-health-disparities.page

Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care

The Institute of Medicine researched the extent of disparities in the types and quality of health services received by U.S. racial and ethnic minorities and non-minorities; explore factors that may contribute to inequities in care; and recommend policies and practices to eliminate these inequities. The report from that study, Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care, found that a consistent body of research demonstrates significant variation in the rates of medical procedures by race, even when insurance status, income, age, and severity of conditions are comparable. IOM Treatment

OMH Minority Population Health Statistics

The Office of Minority Health is dedicated to improving the health of racial and ethnic minority populations through the development of health policies and programs that will help eliminate health disparities. Supported by the U.S. Department of Health and Human Services, OMH provides detailed demographic, language fluency (where relevant), education, economic, insurance coverage and health status information, as well as full census reports on Black/African American Health, American Indian/Alaskan Native Health, Asian American Health, Hispanic/Latino Health and Native Hawaiian & Pacific Islander Health.
OMH Minority Population Health Statistics

CDC Race & Ethnic Minority Populations and Health Disparities & Inequalities Report 2013

Centers for Disease Control and Prevention's Office of Minority Health and Health Equity (OMHHE) mission is to advance health equity and women's health issues across the nation through CDC's science and programs, and increase CDC's capacity to leverage its diverse workforce and engage stakeholders toward this end. Goals are in health equity, women's health, diversity & inclusion, organizational capacity. Plus visions of a world where all people have the opportunity to attain the best health possible.
http://www.cdc.gov/minorityhealth/populations.html

CDC Health Disparities and Inequalities Report – United States, 2013

HHS Action Plan to Reduce Racial and Ethnic Health Disparities

The *HHS Action Plan to Reduce Racial and Ethnic Health Disparities* outlines goals and actions HHS will take to reduce health disparities among racial and ethnic minorities. With the HHS Disparities Action Plan, the Department commits to continuously assessing the impact of all policies and programs on racial and ethnic health disparities. It will promote integrated approaches, evidence-based programs and best practices to reduce these disparities. The HHS Action Plan builds on the strong foundation of the Affordable Care Act and is aligned with programs and initiatives such as Healthy People 2020, the First Lady's *Let's Move* initiative and the President's National HIV/AIDS Strategy.
HHS Action Plan to Reduce Racial and Ethnic Health Disparities

Cultural Knowledge/ Language – Specific Sites

Ethnomed

EthnoMed contains information about cultural beliefs, medical issues and related topics pertinent to the health care of immigrants to Seattle or the US, many of whom are refugees fleeing war-torn parts of the world. http://ethnomed.org/ethnomed

The Cross Cultural Health Care Program

The mission of The Cross Cultural Health Care Program is to serve as a bridge between communities and health care institutions to advance access to quality health care that is culturally and linguistically appropriate. We provide resources and training for individuals and institutions with the goal of systems change and a vision that *Healthcare in every Community, every Community in Healthcare.* http://xculture.org/

Black/African American Health
Traditional Beliefs: Cultural Competency
http://etl2.library.musc.edu/cultural/traditional/traditional_2.php

OMH Minority Populations: African American Profile
http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=61

American Indian/Alaska Native/Native Hawaii
Alaska Native Knowledge Network
ANKN is a resource for compiling and exchanging information related to Alaska Native knowledge systems and ways of knowing. ANKN creates and distributes a variety of publications that assist Native people, government agencies, educators and the general public in gaining access to the knowledge base that Alaska Natives have acquired through cumulative experience over millennia. http://www.ankn.uaf.edu/Publications/Knowledge.html

OMH Minority Populations: American Indian/Alaska Native Profile
http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=62

Asian American/Pacific Islander
Provider's Guide to Quality & Culture Asian American and Pacific Islander Seminars (Not a US Government web site) http://erc.msh.org/aapi/index.html

OMH Minority Populations: Asian American Profile
http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=63

OMH Minority Populations: Native Hawaiians and Pacific Islanders
http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=65

Hispanic/Latino/Spanish
USA-Mexico Border Health Cultural Competency Page (HRSA grantee Web site)
https://www.raconline.org/topics/border-health?topic=cultural%20competency

The Provider's Guide to Quality and Culture
Designed to assist healthcare organizations throughout the United States in providing high quality, culturally competent services to multi-ethnic populations.
Sponsoring organization: Health Resources and Services Administration.
http://erc.msh.org/mainpage.cfm?file=1.0.htm&module=provider&language=English

Traditional Beliefs: Cultural Competency
http://etl2.library.musc.edu/cultural/traditional/traditional_12.php

Hablamos Juntos: Basic Building Blocks of Translation
http://www.hablamosjuntos.org/sm/default.translation_basics.asp

Hablomos Juntos: Interpreter Services
http://www.hablamosjuntos.org/is/default.index.asp

Quality & Culture Topic: Working with an Interpreter
http://erc.msh.org/mainpage.cfm?file=4.5.0.htm&module=provider&language=English

Quality & Culture Topic: Non-Verbal Communication
http://erc.msh.org/mainpage.cfm?file=4.6.0.htm&module=provider&language=English

Legal Mandates for Interpreter Services
http://etl2.library.musc.edu/cultural/interpreters/interpreters_3.php