

CURRICULUM VITAE
Guanrong (Garry) Cai
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PERSONAL INFORMATION:

University Address: Division of Biokinesiology and Physical Therapy
Herman Ostrow School of Dentistry
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EDUCATION:

2020-present Doctor of Philosophy (Advisor: George Salem, PhD)
University of Southern California
Division of Biokinesiology and Physical Therapy

2019-2020 Master of Science
University of Southern California
Division of Biokinesiology and Physical Therapy

2014-2018 Bachelor of Science (Magna Cum Laude)
California State University, Bakersfield
Department of Kinesiology and Physical Education

RESEARCH EXPERIENCE:

2019-present Musculoskeletal Biomechanics Research Laboratory
(Directors: Drs. Christopher Powers, Kornelia Kulig, George Salem)
Involved projects:

- GREENS - Golf Recreational Exercise to Enhance Survivorship
- The influence of different methods of golf equipment transportation on gait mechanics
- Calculating the support moment during varied tasks
- Examining the role of diet on responses to acute high-intensity interval training
- Golf for healthy aging

Role: MS & PhD student – data collection, data processing, conference presentation, manuscript writing

2019-2020 Study Title: Acupressure Intervention to Improve Fatigue and Physical Functioning of Chinese Immigrant Breast Cancer Survivors (PIs: Drs. Lihua Liu & Judy Wang; NCT number: NCT03091647; Grant Number: 5R21CA209213-02)
Role: Research assistant – data collection & management, participant home visits

2016-2019 Posture and Gait Neuromechanics Laboratory (Director: Brian D. Street, Ph.D)

Involved Projects:

- The Relationship between Spatiotemporal Gait Asymmetry and Fall Risk
- After unilateral lower-limb amputation
- Effect of Patient Age on Outcome Expectations after Total Knee Replacement
- Automatic Gait Abnormality Detection from Video

Role: Research assistant – data collection, clinical visits, conference presentation

Funding

2022-present Golf Recreational Exercise for Enhanced Survivorship (GREENS) Study crowdfunding project – ongoing project with \$12,400 raised to date (<https://fundraise.givesmart.com/vf/GREENS>)

PUBLICATIONS:

Manuscripts

- Moore, G., Kanwar, K., Du Bois, A., **Cai, G.**, & Salem, G. (2022) The Fitness Effects of a 10-Week Golf Training Program for Older Adults: A Non-Randomized, Pre-Post, Pilot Study. *American Journal of Recreation Therapy*. Vol 21, No.3. DOI: <https://doi.org/10.5055/ajrt.2022.0265>
- Moore, J., **Cai, G.**, Kanwar, K., Lee, H., Hawkes, R., & Salem, G. Physical Demands of Tasks in a Golf Training Program for Novice Older Adults. *In progress*.
- **Cai, G.**, Cannon, J., Zou, Y., & Salem, G. The Influence of Different Methods of Golf Equipment Transportation on Gait Mechanics. *In progress*.

Conference Proceedings

- McKay, R., **Cai, G.***, Merino, S., Rodriguez, C., Scholefield, Z., Moore, J., Salem, G., & Lei, C. Utilizing Data Clustering for Hypotheses Exploration in Multimodal Exercise and Health Interventions with Limited Sample Size. *ICCBB 2022*, December 26–28, 2022, Bali Island, Indonesia. <https://doi.org/10.1145/3589437.3589446>
*Co-first and presenting author

Abstracts

- **Cai, G.** & Salem, G. Golf Recreational Exercise for ENhanced Survivorship (GREENS) in Underrepresented Prostate Cancer Survivors. Society
- **Cai, G.**, Cannon, J., Zou, Y., & Salem, G. Frontal Plane Knee Demand in Golf Equipment Transportation Tasks. ACSM 2023 Annual Meeting and World Congresses, May 30-June 2. Poster presentation
- Zou, Y., **Cai, G.**, Cannon, J., & Salem, G. Gait Kinematics and Between-Limb Symmetry Associated with Bilateral and Unilateral Golf Equipment Carriage. ACSM 2023 Annual Meeting and World Congresses, May 30-June 2. Poster presentation
- **Cai, G.**, Moore, J., & Salem, G. The Effects of Golf Recreational Exercise Programs on Cognitive Performance. ACSM 2022 Annual Meeting and World Congresses, May 31-June 4. Poster presentation
- **Cai, G.**, Cannon, G., Zou, Y., & Salem, G. Unilateral Load Carriage in Golf Increases Frontal Plane Moment Demand at the Knee. SWACSM 2022, Oct 28-29. Poster presentation

- Zou, Y., **Cai, G.**, Cannon, G., & Salem, G. Does Carrying Golf Equipment Unilaterally or Bilaterally Influence Spatiotemporal Gait Parameters? SWACSM 2022, Oct 28-29. Poster presentation
- **Cai, G.**, Moore, J., & Salem, G. The Effects of Golf Recreational Exercise Programs on Cognitive Performance. ACSM 2022 Annual Meeting and World Congresses, May 31-June 4. Poster presentation.
- Moore, J., **Cai, G.**, Kanwar, K., & Salem, G. Changes in Gait Velocity Following a 10-Week Golf Program in Healthy, Older Adults. ACSM 2022 Annual Meeting and World Congresses, May 31-June 4. Oral presentation
- **Cai, G.**, Cannon, J., Moore, J., Ogata, N., Zou, Y., & Salem, G. Frontal Plane Lower Extremity Kinetics during Golf Equipment Transportation. USC Ostrow Research Day 2022. March 23, 2022. Poster presentation
- **Cai, G.**, Moore, J., Kanwar, K., Lee, H., Hawkes, R., & Salem, G. Sagittal Plane Lower Extremity Joint Demands of the Golf Swing in Novice Older Adult Golfers. *XXVIII Congress of the International Society of Biomechanics (ISB)*. July 25-29, 2021. Online oral presentation
- Moore, J., Kanwar, K., Lee, H., **Cai, G.**, Hawkes, R., & Salem, G. Lower Extremity Biomechanical Demands of a Bend and Pick-Up Task in Healthy, Older Adults. *XXVIII Congress of the International Society of Biomechanics (ISB)*. July 25-29, 2021. Online poster presentation
- **Cai, G.** & Salem, G. (2021) Golf – The Next Novel Activity Intervention for Breast Cancer Survivors? *USC Ostrow Research Day 2021*. May 27, 2021. Online poster presentation
- Moore J., **Cai G.**, & Salem G. Producing High-Intensity Interval Training Protocols from Heart Rate Maximum Testing. *USC Ostrow Research Day 2021*; May 27, 2021. Online poster presentation
- **Cai, G.**, Moore, J., Kanwar, K., Lee, K., Hawkes, R., & Salem, G. (2020) Physical Activity During Mindful Exercise Activity in Healthy Older Adults: Golf. *USC Institute for Integrative Health & Wellness Virtual Conference*. November 14, 2020. Online poster presentation
- **Cai, G.**, Moore, J., Kanwar, K., Lee, K., Hawkes, R., Salem, G. (2020) Feasibility and Adherence of a Novel Golf Training Intervention for Healthy Older Adults. *2020 Annual Meeting of American College of Sports Medicine*. Online Poster presentation
- **Cai, G.**, Moore, J., Kanwar, K., Lee, K., Hawkes, R., Salem, G. (2020) Are Swing Biomechanical Demands Unidirectional in Novice, Older Adult Golfers? *2020 NSCA National Conference*. July 8-11, 2020. Accepted for podium presentation and masters award consideration
- **Cai, G.**, Moore, J., Kanwar, K., Lee, K., Hawkes, R., Salem, G. (2019) Effect of a Novel Golf Program on Gait Performance in Older Adults. *2019 Annual Meeting of American College of Sports Medicine, Southwest Chapter*. October 25-26, 2019. Poster presentation
- Miller, J. M., Hudson, A., Contreras, N., Serrano, D., **Cai, G.**, Morgan, K., & Street, B. D. (2017) Metabolic Syndrome and Activity Levels in College Students. *Medicine & Science in Sports & Exercise* 49:976. DOI: 10.1249/01.mss.0000519666.64869.97
- **Cai, G.**, Cruz, A., & Street, B. D. (2017) Sensorless Video-based Motion Capture System for Sport and Clinical Purposes. *2017 Annual Meeting of American College of Sports Medicine, Southwest Chapter*. October 20-21, 2017. Poster presentation

Invited Talks

- 2023 USC Institute for Integrative Health & Wellness Symposium:
Mind Body Benefits of Recreational Exercise
Panel members:

Guanrong Cai – Golf – a Multimodal Recreational Activity with Benefits to Quality of Life

Susan R. Harris – Mind/Body Benefits of Dragon Boat Racing after Breast Cancer

Jonathan Casper – Physical and Psychosocial Benefits of Pickleball with Older Adults

Academic Presentations

- 2022 6th International Conference on Computational Biology and Bioinformatics (ICCB): Utilizing Data Clustering for Hypotheses Exploration in Multimodal Exercise and Health Interventions with Limited Sample Size. Dec 26-28.
- Fall 2021 LA County Cancer Surveillance Program MELD research group presentation: A Multimodal Recreational Exercise Intervention for Cancer Survivors – Golf
- Fall 2020 MBRL presentation: Potential Utilization of a Comprehensive Golf Activity Intervention in Populations with Cancer
- Spring 2021 MBRL presentation: The Influence of Different Methods of Golf Equipment Transportation on Lower Extremity Joint Mechanics during Gait
- 2021 USC Master’s Night presentation: Differences in Golf Swing Lower Extremity Demands Between Lead and Trail Limb – Implications for Injury Prevention in Novice, Older Adult Golfers

TEACHING EXPERIENCE:

2020-present Musculoskeletal Anatomy

(Fall Semesters; Course director: George Salem, PhD)

Role: Teaching assistant – cadaver laboratory instruction, dissection, student assessment, software support

2020-2021 Analytical Anatomy

(Spring Semester; Course director: Kornelia Kulig, PhD)

Role: Teaching assistant – cadaver laboratory instruction (clinical correlates section), dissection, student assessment

2022-present Clinical Electrical Physiology

(Spring Semester; Course director: Rob Landel, PT, DPT)

Role: Teaching assistant – laboratory instruction, electrode equipment management, student assessment

DEPARTMENTAL SERVICE:

2019-present USC Musculoskeletal Biomechanics Research Laboratory (<https://sites.usc.edu/mbrl/>) & Institute for Therapeutic Golf Science (https://linktr.ee/usc_itgs)

Role: Website and Social Media Outreach Manager

2023-present USC Biokinesiology Student Council

Role: Biomechanics laboratory representative

2023-present Golf Science Club

Role: Organizer

CERTIFICATIONS & SKILLS:

- Certificate: The CET Future Faculty Teaching Institute at USC (May 2020)
- Certificate: INTD 500 – Responsible Conduct of Research at USC (July 2020)
- Certificate: Basic Life Support by AHA (July 2021; eCard: 215414082173)
- Language skills: Native in Cantonese and Mandarin, fluent in English
- Research skills: 3D motion capture, electromyography, player tracking and athlete management
- Computer skills: Microsoft office, MATLAB, SPSS, Qualisys Track Manager, C Motion Visual 3D, GAITRite, Catapult Sports

AWARDS & HONORS:

- 2023 ACSM Biomechanics Interest Group – Student Travel Award
- 2022 ACSM Cancer Special Interest Group – Nick Cumer Award
- Outstanding Undergraduate Student 2018, CSUB School of Social Sciences and Education
- Outstanding Undergraduate Student 2018, CSUB Department of Kinesiology
- Academic All-Conference 2016-2017, Western Athletic Conference
- National Society of Leadership and Success, active member, NELA Award recipient
- Alpha Chi National College Honor Society, CSUB, Active member