Christopher Daniel Ramos, Ph.D.

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Ph.D., Biomedical Engineering (*December 2017*)
University of Southern California, Los Angeles, CA
Advisor: Professor Jill McNitt-Gray, Ph.D.
Dissertation: Regulation of Linear and Angular Impulse Generation: Implications for Athletic Performance

M.S., Biomedical Engineering (*May 2013*)
University of Southern California, Los Angeles, CA

B.S., Engineering (*May 2011*)
Harvey Mudd College, Claremont, CA

Current Position

Arizona State University Phoenix, AZ
Lecturer – Kinesiology *2018 – Present*

Advance higher education of students studying to be physicians, physical therapists, coaches, and trainers by leading hands-on experiences and classes in biomechanics and kinesiology.

Previous Positions

United States Olympic Committee Chula Vista / Los Angeles, CA
Performance Coach / Biomechanics Consultant *2011 – 2018*

Provided high-level coaching, biomechanics analysis, and written reports of national and Olympic athletes for USA Track and Field, USA Volleyball, USA Swimming, and USA Diving.

- Used technology to deliver impulse generation and movement feedback to players and coaches
- Worked with coaches to monitor and assess each individual's progress for performance and injury risk

University of Southern California Athletics Los Angeles, CA
Performance Coach / Biomechanics Consultant *2011 – 2018*

Provided enhanced feedback and monitored athletes over time to determine performance improvement and assess injury risk for USC volleyball, tennis, track, cross-country, and golf.

- Used technology to augment feedback and improve movement performance 1-on-1 with players
- Assessed load exposure over time using 3D sensors on the lower and upper extremities

Conejo Valley Multisport Masters Los Angeles, CA
Performance Coach *2009 – 2018*

Trained swimmers and triathletes ranging from beginner to Olympic level with a focus on individual athlete education and understanding both in small and large group settings.

- Created and coached workouts while communicating group and individual specific goals
- Educated athletes by breaking down movements into goal-directed tasks using external cues

Classes

KIN 334: Functional Anatomy

Introduce students to the concepts of muscle anatomy by teaching them how to:

- Identify origin and insertion points for muscles that produce primary human movements with the help of prerequisite knowledge of important bones, bony features, and muscles
- Derive each major muscle's action based on their origin, insertion, and structure
- Identify the joint characteristics, primary tendons, and ligaments for each major joint
- Apply this knowledge to the evaluation of human movement, common musculoskeletal injuries / impairments, and muscular function

KIN 335: Biomechanics

Introduce students to total body, joint level, and tissue level biomechanics by teaching students to:

- Apply the basics of linear and angular kinematics, Newton's laws, linear kinetics, and torque to human movement and describe examples of how these principles are related to performance and injury
- Gain an understanding of the mechanical and structural properties of the musculoskeletal system

KIN 418: Experimental Neuromechanics

Advance students understanding of biomechanics and motor control by teaching students how to:

- Explain the theory, proper use techniques, and limitations of electromyography, kinematic video analysis, and force plates
- Perform data collection, analysis, reporting, and interpretation with various equipment
- Propose and execute original quantitative analyses utilizing equipment covered in the course
- Effectively present and disseminate biomechanics and motor control related information

Teaching and Mentoring

Barrett Honors Contracts

Worked with Barrett Honors students in Biomechanics on projects looking at performing and analyzing video of athletes in the field for the purposes of determining and improving performance.

- Met weekly with students to discuss literature and guide investigation direction
- Culminated in 15 minute professional presentation to fellow Barrett students
- Worked with 4 students in Fall 2018

Service and Community Engagement

Athletic Affinity Network Fall 2018 – Present

Affinity network looking to form into a translational team between athletes, trainers, coaches, medical personnel, students, teachers, and major community partners.

- Participated in meetings working towards forming relationships between CHS, ASU Athletics, and community partners such as Global Sports Institute
- Generated, modified, and submitted documentation for the Athletics Affinity Network Proposal
- Currently working with Auckland University of Technology to form graduate program for new Sports Science and Performance Major

Summer Bridge Program Fall 2018 – Present

Committee charged with the primary goal of creating program for incoming freshman to introduce potential career paths via CHS majors with secondary goal of improving freshman retention within CHS.

- Participated in meetings working towards designing the program length and content of a Summer Bridge Program for Summer of 2019
- Surveyed current students as to preferred content and duration of a potential program
- Working towards connecting with community partners and medical professionals for potential participation in program

Intraoperative Neurophysiological Monitoring Fall 2018 – Present

Committee charge with the goal of investigating and potentially creating pathway within Kinesiology for students to pursue a degree / certification for work in Intraoperative Neurophysiological Monitoring (IONM)

- Participated in meetings with current medical professionals interested in expanding the Kinesiology major to include certification and internships in IONM

Professional Publications and Presentations

Ramos, C.D., Wilcox, R.R., McNitt-Gray, J.L. (accepted November 2018) "Generation of Linear Impulse during the Takeoff of the Long Jump", *Journal of Applied Biomechanics*

Ramos, C.D., McNitt-Gray, J.L., "Regulation of Linear Impulse during the Takeoff of the Long Jump", 21st Annual Fred S. Grodins Research Symposium, Los Angeles, California 2017 (presentation)

Ramos, C.D., McNitt-Gray, J.L., "The Effect of Augmented Feedback versus Timing Feedback on Quick First Step Impulse Generation in Volleyball Players", 20th Annual Fred S. Grodins Research Symposium, Los Angeles, California 2016 (presentation)

McNitt-Gray, J.L., **Ramos, C.** et al. (2015) "Using Technology and Engineering to Facilitate Skill Acquisition and Improvements in Performance", *Journal of Sports Engineering and Technology*: 229 (2)

Ramos, C.D., Sidaway, B., McNitt-Gray, J.L., "The Effect of Augmented Feedback on Impulse Generation During a Quick First Step", 2015 International Society of Biomechanics, Glasgow, Scotland (presentation)

Ramos, C.D., Sidaway, B., McNitt-Gray, J.L., "Quick First Step Impulse Generation and the Effect of Augmented Feedback", 19th Annual Fred S. Grodins Research Symposium, Los Angeles, California 2015 (presentation)

Ramos, C.D., McNitt-Gray, J.L., "Conversion of Horizontal to Vertical Momentum in Realistic Contexts: Volleyball Blocking", 2014 World Congress of Biomechanics, Boston, Massachusetts (presentation)

Ramos, C.D., McNitt-Gray, J.L., "Conversion of Horizontal to Vertical Momentum in Realistic Contexts: Volleyball Blocking", 18th Annual Fred S. Grodins Research Symposium, Los Angeles, California 2014 (presentation)

Ramos, C.D., McNitt-Gray, J.L., "Lateral Impulse Generation in an Unexpected Quick First Step", 2013 Southwest American College of Sports Medicine, Irvine, California (invited speaker presentation)

Ramos, C.D., McNitt-Gray, J.L., "Lateral Momentum Generation in a Quick First Step", 2013 American Society of Biomechanics, Omaha, Nebraska (presentation)

Ramos, C.D., McNitt-Gray, J.L., Mathiyakom, W., "Common Multijoint Control Strategies for Generating Backward Angular Momentum in Forward and Backward Translating Tasks", 2013 International Society of Biomechanics, Natal, Brazil (presentation)

Ramos, C.D., McNitt-Gray, J.L., Mathiyakom, W., "Multijoint Control Strategies for Generating Backward Angular Impulse in Forward and Backward Translating Tasks", 17th Annual Fred S. Grodins Research Symposium, Los Angeles, California 2013 (presentation)

Ramos, C.D., McNitt-Gray, J.L., Mathiyakom, W., "Common Control Strategies for Generating Angular Momentum in Forward and Backward Translating Tasks", 2012 American Society of Biomechanics, Gainesville, Florida (presentation)

Ramos, C.D., McNitt-Gray, J.L., Mathiyakom, W., "Common Control Strategies for Generating Angular Impulse in Forward and Backward Translating Tasks", 16th Annual Fred S. Grodins Research Symposium, Los Angeles, California 2012 (presentation)

Ramos, C.D., Ahn, A.N., Lim, C., "*In Vitro* Antagonistic Control of Frog Leg Muscles by Nerve Stimulation, Howard Hughes Medical Institute, Claremont, CA 2011 (presentation)