RYAN ALCANTARA

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EDUCATION

2019 – Pres **Ph.D. Integrative Physiology – University of Colorado Boulder**
Advisor: Dr. Alena Grabowski – Applied Biomechanics Lab
Anticipated Graduation: Spring 2021

2017 – 2019 **M.Sc. Integrative Physiology – University of Colorado Boulder**
Advisor: Dr. Alena Grabowski – Applied Biomechanics Lab

2011 – 2015 **B.Sc. Applied Human Biology, Kinesiology Minor – Seattle Pacific University**
Advisor: Dr. Cara Wall-Scheffler

RESEARCH EXPERIENCE

2018 – Pres **Graduate Research Assistant – University of Colorado Boulder**
Advisor: Dr. Alena Grabowski. Funding by the PAC-12 Student-Athlete Health & Well-Being Grant Program

2016 – 2017 **Biomechanics Research Technician – Brooks Running Company**
Lab Director: Eric Rohr. Performed 3D motion capture data collections, developed custom MATLAB scripts for data analysis, reported findings to Footwear R&D.

2015 – 2016 **Biomechanics Lab Intern – Brooks Running Company**
Lab Director: Eric Rohr. Assisted with mechanical footwear testing, subject recruitment, and data processing in Cortex and Visual 3D.

2014 – 2015 **Undergraduate Research Assistant – Seattle Pacific University**
Advisor: Dr. Cara Wall-Scheffler. Lead a research study investigating the biomechanical and physiological effects of running with a stroller.

TEACHING EXPERIENCE

2018 **Guest Lecturer – Colorado School of Mines**
Introductory Biomechanics, taught by Dr. Jana Montgomery

2017 – 2018 **Graduate Teaching Assistant – University of Colorado Boulder**
Human Anatomy Laboratory, Department of Integrative Physiology

2016 **Guest Lecturer** – Seattle Pacific University
Disciplinary Research and Writing, taught by Dr. Cara Wall-Scheffler

2014 – 2015 **Teaching Assistant – Seattle Pacific University**
Introductory Physics I & II

HONORS & AWARDS

2020 Best Presentation – Athletics, International Society of Biomechanics in Sports (ISBS)

2019 IPHY Fellowship Travel Award, University of Colorado Boulder

2018 Diversity Travel Award, American Society of Biomechanics (ASB)
2018 Best Masters Student Poster Presentation, Rocky Mountain ASB Regional Meeting
2018 Graduate Student Travel Grant, University of Colorado Boulder
2017 Graduate Dean's Fellowship, University of Colorado Boulder
2012 Oregon Latino Scholarship, Hispanic Metropolitan Chamber of Commerce
2011 – 2015 President's Scholar Award, Seattle Pacific University

PEER-REVIEWED PUBLICATIONS

Day E., **Alcantara R.,** McGeehan M., Grabowski A., Hahn M. Low-pass filter cutoff frequency affects sacral-mounted inertial measurement unit estimations of peak vertical ground reaction forces and contact time during treadmill running. (*under review*).

Alcantara R. Prosthetic leg design, force production, and curve sprint performance: A pilot study. *International Society of Biomechanics in Sports Proceedings Archive:* 38(1), Article 230

Alcantara R., Beck O., Grabowski A. Added lower limb mass does not affect biomechanical asymmetry but increases metabolic power in runners with a unilateral transtibial amputation. *European Journal of Applied Physiology 120, 1449-1456.* (2020).

Alcantara R. Dryft: A Python and MATLAB package to correct drifting ground reaction force signals during treadmill running. *Journal of Open Source Software 4(44), 1910* https://doi.org/10.21105/joss.01910 . (2019).

Alcantara R., Trudeau M., Rohr E. Calcaneus range of motion underestimated by markers on running shoe heel. *Gait & Posture 63: 68-72.* (2018).

Alcantara, R. & Wall-Scheffler, C. Stroller Running: Energetic and kinematic changes across pushing methods. *PLoS One 12(7): e0180575.* (2017).

PREPRINTS

Alcantara, R., Beck, O., Grabowski, A. Added lower limb mass does not affect biomechanical asymmetry but increases metabolic power in runners with a unilateral transtibial amputation. Preprint. *SportRxiv* https://doi.org/10.31236/osf.io/xcus7 . (2019).

CONFERENCE PRESENTATIONS

Alcantara R. (2020) Prosthetic Leg Design, Force Production, and Curve Sprint Performance: A Pilot Study*****. International Society of Biomechanics in Sports. (virtual presentation)
Awarded Best Presentation (Topic: Athletics)

Alcantara R. & Grabowski A. (2020) Loading Asymmetry Before and After Metatarsal Stress Fracture: A Case Study. American Society of Biomechanics. (accepted – virtual presentation)

Alcantara R. (2020) Curve Sprinting With a Split-Toe Running Specific Prosthesis: A Pilot Study. American Society of Biomechanics. (accepted – virtual presentation)

Alcantara R. & Grabowski A. (2020) Curve Sprinting with a Split-Toe Running Specific Prosthesis: A Pilot Study. Rocky Mountain ASB Meeting. (accepted – conference cancelled)

Alcantara R., Day E., Hahn M., Grabowski A. (2019) Sacral Accelerations Predict Whole Body Kinetics and Stride Kinematics During Running. International Society of Biomechanics. (podium)

Alcantara R., Day E., Hahn M., Grabowski A. (2019) Sacral Accelerations Predict Whole Body Kinetics and Stride Kinematics During Running. Rocky Mountain ASB Meeting. (podium)
Alcantara R., Beck O., Grabowski A. (2018) Mass added to a running-specific prosthesis increases metabolic power during running. American Society of Biomechanics. (thematic)
Alcantara R., Beck O., Grabowski A. (2018) Mass added to a running-specific prosthesis increases metabolic power during running*****. Rocky Mountain ASB Meeting. (poster)
Awarded Best Poster Presentation by M.Sc. Student
Alcantara R., Trudeau M., Brüggemann G., Hamill J., Rohr E. (2016) Running Shoe Forefoot Bending Stiffness Affects Calf Muscle EMG. Northwest ASB Meeting. (poster)
Alcantara R. & Wall-Scheffler C. (2016) Running With A Stroller: Kinematic and Energetic Changes Across Different Stroller Pushing Techniques. American College of Sports Medicine. (poster)
Alcantara R. & Wall-Scheffler C. (2015) Push it, Push it Real Good: The energetic cost of running with a stroller. Murdock College Science Research Program. (poster)
Alcantara R. & Wall-Scheffler C. (2015) Push it, Push it Real Good: The energetic cost of running with a stroller. Seattle Pacific University Summer Research Symposium. (podium)

INVITED PRESENTATIONS

2020	Panel Member. Student Academic Success Center, University of Colorado Boulder
2019	Using inertial measurement units to predict running kinetics and kinematics. LEOMO Inc.
2019	Wearable devices estimate biomechanical risk factors for stress fractures. Integrative Physiology Department Colloquium, University of Colorado Boulder
2018	Panel Member. Capstone Seminar, George Fox University
2016	Panel Member. Biology Cornerstone Seminar, Seattle Pacific University

MENTORSHIP & OUTREACH

2019 – 2020	Mentor. "L2k" Legacy High School STEM Internship Program, Boulder, CO
2019 – Pres	Mentor. University of Colorado Boulder Graduate Student Peer Mentoring Program
2019	Volunteer. Colorado Advantage Program, University of Colorado Boulder
2018 – 2019	University of Colorado Boulder National Biomechanics Day
2017 – Pres	Supervisor. Applied Biomechanics Lab Undergraduate Researchers

ACADEMIC SERVICE

2020 – Pres	Reviewer, British Journal of Sports Medicine
2019 – Pres	Reviewer, Journal of Open Source Software
2019	Co-Chair, Running Performance Session – *Footwear Biomechanics Symposium*
2018	Co-Chair, PhD Competition Session – *American Society of Biomechanics Meeting*
2018	Co-Chair, Sports Session – *Rocky Mountain ASB Regional Meeting*
2017 – 2018	ASB Student Advisory Committee for Biomechanics Advocacy

2017 Ad Hoc Reviewer, Journal of Applied Physiology

SPECIALIZED SKILLS

Data Analysis: MATLAB, R, Python, Git, LaTeX, R Shiny, Tableau

Laboratory Equipment: Motion Analysis Cortex, Vicon Nexus 2.x, Visual 3D, Novel Pedar, Instron Material Testing, Delsys & Noraxon EMG, IMeasureU, Treadmetrix, Bertec, Parvo Medics, Oxycon Mobile

MEDIA & PRESS

Selected Press for *Energetic Cost of Stroller Running*:

New York Times

Inside Science

Society Magazine (Paris, France), by Emmanuelle Andreani

Personal Interview - SPU etc. Magazine:

https://voices.spu.edu/articles/dream-career-reality-college-etc