

RYAN ALCANTARA

Email: ryan.alcantara@colorado.edu

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

- 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

PUBLICATIONS & PREPRINTS

- Alcantara R.** & Grabowski A. (*in press*) Prosthetic leg design, force production, and curve sprint performance: A pilot study. *Journal of Sports Biomechanics*
- Day E., **Alcantara R.**, McGeehan M., Grabowski A., Hahn M. (*under review*) Low-pass filter cutoff frequency affects sacral-mounted inertial measurement unit estimations of peak vertical ground reaction forces and contact time during treadmill running.
- Alcantara, R.** (2019) 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>
- Alcantara, R.**, Beck, O., Grabowski, A. (2019) 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>
- Alcantara, R.**, Trudeau, M., Rohr, E. (2018) Calcaneus range of motion underestimated by markers on running shoe heel. *Gait & Posture* 63: 68-72
- Alcantara, R.** & Wall-Scheffler, C. (2017) Stroller Running: Energetic and kinematic changes across pushing methods. *PLoS One* 12(7): e0180575

CONFERENCE PRESENTATIONS

- Alcantara R.** & Grabowski A. (2020) Prosthetic Leg Design, Force Production, and Curve Sprint Performance: A Pilot Study. International Society of Biomechanics in Sport. (accepted - conference cancelled)
- Alcantara R.** & Grabowski A. (2020) Loading Asymmetry Before and After Metatarsal Stress Fracture: A Case Study. American Society of Biomechanics. (accepted)
- Alcantara R.** & Grabowski A. (2020) Curve Sprinting With a Split-Toe Running Specific Prosthesis: A Pilot Study. American Society of Biomechanics. (accepted)
- 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 – 2020** 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** Ad Hoc Reviewer, British Journal of Sports Medicine
- 2019 – Pres** Ad Hoc 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>