

# RYAN ALCANTARA

[ryan.alcantara@colorado.edu](mailto:ryan.alcantara@colorado.edu)  
[ryan-alcantara.com](http://ryan-alcantara.com)

## 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

- Alcantara R.**, Day E., Grabowski A., Hahn M. Sacral Acceleration can predict whole-body kinetics and stride kinematics across running speeds (*under review*).
- 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. (virtual presentation)
- Alcantara R.** (2020) Curve Sprinting With a Split-Toe Running Specific Prosthesis: A Pilot Study. American Society of Biomechanics. (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**      [“Version Control for Researchers”](#) Tutorial. American Society of Biomechanics Annual Meeting
- 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 – Pres** Mentor. University of Colorado Boulder Graduate Student Peer Mentoring Program
- 2019 – 2020** Mentor. “L2k” Legacy High School STEM Internship Program, Boulder, CO
- 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**      Co-Chair, Locomotion Session – *American Society of Biomechanics Meeting*
- 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>