

RYAN ALCANTARA

Denver, CO // 541-951-7926 // ryan.alcantara@colorado.edu // ryan-alcantara.com

EDUCATION

University of Colorado Boulder

PhD candidate in Integrative Physiology

Graduate Spring 2021

University of Colorado Boulder

MSc in Integrative Physiology

2019

Seattle Pacific University

BSc Applied Human Biology, Kinesiology Minor

2015

RESEARCH EXPERIENCE

Graduate Research Assistant

Applied Biomechanics Lab, University of Colorado Boulder

Advisor: Dr. Alena Grabowski

Funded by the PAC-12 Student-Athlete Health & Well-Being Grant Program

2017 – Present

Research Technician

Footwear Biomechanics Laboratory, Brooks Running

2016

Research Intern

Footwear Biomechanics Laboratory, Brooks Running

2015

Undergraduate Research Assistant

Seattle Pacific University

Advisor: Dr. Cara Wall-Scheffler

2014

TEACHING EXPERIENCE

Graduate Teaching Assistant

Human Anatomy Laboratory, University of Colorado Boulder

2017

Undergraduate Teaching Assistant

Introductory Physics I & II, Seattle Pacific University

2014

HONORS & AWARDS

Eyes High Postdoctoral Fellowship, University of Calgary (*awarded, declined*)

2020

Best Presentation – Athletics, International Society of Biomechanics in Sports

2020

IPHY Fellowship Travel Award, University of Colorado Boulder

2019

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

2018

Graduate Dean's Fellowship, University of Colorado Boulder

2017

Oregon Latino Scholarship, Hispanic Metropolitan Chamber of Commerce

2012

President's Scholar Award, Seattle Pacific University

2011 – 2015

PUBLICATIONS

- Alcantara R.**, Day E., Hahn M., Grabowski A. Sacral acceleration can predict whole-body kinetics and stride kinematics across running speeds *PeerJ*. <https://doi.org/10.7717/peerj.11199>. (2021).
- Alcantara R.**, Edwards B., Millet G., Grabowski A. Predicting continuous ground reaction forces from accelerometers during uphill and downhill running: A recurrent neural network solution. *bioRxiv* 2021.03.17.435901, (2021).
- 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. *Journal of Biomechanics* 119, 110323, (2021).
- Alcantara R.** Prosthetic leg design, force production, and curve sprint performance: A pilot study. *International Society of Biomechanics in Sports Proceedings Archive* 38(1), (2020).
- 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).

CONFERENCE PRESENTATIONS

- Alcantara R.** & Grabowski A. (2021) Biomechanics of the Inside and Outside Leg When Sprinting Along Flat Curves. Rocky Mountain ASB Meeting.
- Diaz G., **Alcantara R.**, Grabowski A. (2021) Effects of Curve Radii on Maximum Curve Sprinting Velocity in Athletes With a Leg Amputation. Rocky Mountain ASB Meeting.
- Alcantara R.** (2020) Prosthetic Leg Design, Force Production, and Curve Sprint Performance: A Pilot Study*. International Society of Biomechanics in Sports.
*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.
- Alcantara R.** (2020) Curve Sprinting With a Split-Toe Running Specific Prosthesis: A Pilot Study. American Society of Biomechanics.
- 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.
- Alcantara R.**, Day E., Hahn M., Grabowski A. (2019) Sacral Accelerations Predict Whole Body Kinetics and Stride Kinematics During Running. Rocky Mountain ASB Meeting.
- Alcantara R.**, Beck O., Grabowski A. (2018) Mass added to a running-specific prosthesis increases metabolic power during running. American Society of Biomechanics.
- Alcantara R.**, Beck O., Grabowski A. (2018) Mass added to a running-specific prosthesis increases metabolic power during running*. Rocky Mountain ASB Meeting.
*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.
- Alcantara R.** & Wall-Scheffler C. (2016) Running With A Stroller: Kinematic and Energetic Changes Across Different Stroller Pushing Techniques. American College of Sports Medicine.
- 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.
- 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.

INVITED PRESENTATIONS

- Using Accelerometers to Measure a Runner's Biomechanics and Monitor Injury Risk** 2021
LIBM Seminar, Université Jean Monnet Saint-Etienne
- Improving Running Performance and Monitoring Injury Risk with Wearable Devices** 2021
Neuromuscular Biomechanics Lab, Stanford University
- Version Control for Researchers Workshop** 2020
University of Wisconsin-Milwaukee
- Version Control for Researchers Workshop** 2020
American Society of Biomechanics Annual Meeting
- Panel Member** 2020
Biology Cornerstone Seminar, Seattle Pacific University
- Panel Member** 2020
Student Academic Success Center, University of Colorado Boulder
- Using inertial measurement units to predict running kinetics and kinematics** 2019
LEOMO Inc., Boulder, CO
- Wearable devices estimate biomechanical risk factors for stress fractures** 2019
Integrative Physiology Department Colloquium, University of Colorado Boulder
- Guest Lecturer** 2018
Introductory Biomechanics, Colorado School of Mines
- Panel Member** 2018
Capstone Seminar, George Fox, University
- Guest Lecturer** 2016
Disciplinary Research and Writing, Seattle Pacific University
- Panel Member** 2016
Biology Cornerstone Seminar, Seattle Pacific University

MENTORSHIP & OUTREACH

- Mentor** 2019 – Present
Graduate Student Peer Mentoring Program, University of Colorado Boulder
- Mentor** 2019
"L2k" Legacy High School STEM Internship Program, Boulder, CO
- Volunteer** 2019
Colorado Advantage Program, University of Colorado Boulder

Volunteer Organizer

2018 – 2019

National Biomechanics Day, University of Colorado Boulder

Undergraduate Researcher Supervisor

2017 – 2020

Applied Biomechanics Lab, University of Colorado Boulder

ACADEMIC SERVICE**Moderator**, Biomch-L Weekly Literature Updates

2021 – Present

Co-Chair, Locomotion Session – *American Society of Biomechanics Meeting*

2020

Reviewer, British Journal of Sports Medicine

2020 – Present

Reviewer, Journal of Open Source Software

2019 – Present

Co-Chair, Running Performance Session – *Footwear Biomechanics Symposium*

2019

Co-Chair, PhD Competition Session – *American Society of Biomechanics Meeting*

2018

Co-Chair, Sports Session – *Rocky Mountain ASB Regional Meeting*

2018

Member, ASB Student Advisory Committee for Biomechanics Advocacy

2017 – 2018

SPECIALIZED SKILLS**Laboratory:** Vicon Nexus, Motion Analysis Cortex, Visual3D, Novel Pedar, Instron Material Testing, Delsys sEMG, Noraxon sEMG, IMeasureU, Parvo Medics, Oxycon Mobile, Biodex**Computer:** MATLAB, Python (numpy, pandas, tensorflow, keras, scikit-learn), R (ggplot, caret, nlme, dplyr, R shiny), Git, LaTeX, Slurm Workload Manager, Tableau**Analysis:** Mixed-Effects Models, Linear Regression, Recurrent Neural Networks, Feed-Forward Neural Networks, Random Forests, Transfer Learning**REFERENCES**

Dr. Alena Grabowski – Associate Professor, University of Colorado Boulder

Dr. Rodger Kram – Associate Professor Emeritus, University of Colorado Boulder

MEDIA & PRESS**Selected Press for *Energetic Cost of Stroller Running*:**[New York Times](#)[Inside Science](#)**Personal Interview - SPU etc. Magazine:**<https://voices.spu.edu/articles/dream-career-reality-college-etc>