LINDSEY TREJO

(402)580-5469 LTrejo@gatech.edu

EDUCATION

M.S., Biokinesiology, University of Southern California, 2016-2018
Major GPA: 3.600/4.0 **Cumulative GPA:** 3.417/4.0

B.S., Biological Systems Engineering and B.S., Biochemistry, University of Nebraska—Lincoln. 2009-2014, Minors: Math, Chemistry, Art
Cumulative GPA: 3.550/4.0

HONORS and AWARDS

- Perry Fellowship, University of Southern California, Los Angeles
- Dean's List, College of Engineering, University of Nebraska—Lincoln: 3 Semesters
- Dean's List, College of Arts and Sciences, University of Nebraska—Lincoln: 1 semester
- Undergraduate Creative Activities and Research Experience Recipient (UCARE), University of Nebraska—Lincoln: 1 year
- Holling Memorial Scholarship for Agriculture, University of Nebraska—Lincoln
- Canfield Scholarship, University of Nebraska—Lincoln
- Outstanding Biology Student Award, Lincoln High School, Lincoln, NE

POSITIONS and APPOINTMENTS

Doctoral Student Aug 2018-present

Research Assistant Feb 2017-May 2018

Locomotor Control Laboratory, University of Southern California

- Assisted with kinematic, kinetic, and electromyography data collection on 20 participants using a split-belt treadmill to investigate asymmetry in step length after stroke using standard motion capture in Qualisys
- Led data management practices in a collaborative project between USC and UCLA to ascertain the effects of electrical stimulation of the spinal cord post stroke
- Designed custom algorithms in Matlab for computing fatigue indices from electromyography using power spectral analysis in stroke patients

Research Assistant June 2016-May 2018

Musculoskeletal Biomechanics Research Laboratory, University of Southern California

- Assisted with kinematic, kinetic, and electromyography data collection on 15 participants using a standard motion capture system in Qualisys to diagnose flexor hallucis longus tendinopathy (FHLt) in ballet pointe dancers and investigated differences between healthy dancers, FHLt dancers, and nondancers
- Analyzed and interpreted kinematic, kinetic, and electromyography data using unique code in Visual 3D and Matlab to compare the mechanical demands on the FHLt limb to the unaffected limb while performing sautés, a bipedal jump

Research Assistant 2015-2016

Institute for Rehabilitation Science and Engineering, Madonna Rehabilitation Hospital

- Assisted with kinematic and electromyography data collection on 20 typically developing and 20 disabled children to test the design of the Pediatric **I**ntelligently **C**ontrolled **A**ssisted **R**ehabilitation **E**lliptical (Pedi-ICARE) using standard motion capture in Qualisys
- Trouble-shot custom code in Visual3D
- Processed kinematic and electromyography data in Visual 3D
- Supervised and taught 15 volunteer research assistants how to process kinematic and electromyography data using Qualisys and Visual 3D

Site Director 2015-2016

Get Linked by Lighthouse, Lincoln High School

- Directed up to 200 students per day at an afterschool program for high school students at Lincoln High School
- Taught educational classes on how to apply for college, apply for a job, and understanding personal finances
- Organized STEAM activities for the students to learn to enjoy education
- Tutored students in all courses types

Research Volunteer 2014-2015

Institute for Rehabilitation Science and Engineering at Madonna Rehabilitation Hospital

- Assisted with metabolic and electroencephalograpy data collection on 2 stroke patients during a 24 session training protocol on the **I**ntelligently **C**ontrolled **A**ssisted **R**ehabilitation **E**lliptical (ICARE)
- Assisted with kinematic and electromyography data collection on 20 typically developing and 20 disabled children to test the design of the Pediatric **I**ntelligently **C**ontrolled **A**ssisted **R**ehabilitation **E**lliptical (Pedi-ICARE) using a standard motion capture in Qualisys
- Analyzed kinematic and electromyography data in Qualisys and Visual 3D

Research Assistant 2013-2014

Undergraduate Creative Activities and Research Experience in the Pannier Lab, University of Nebraska—Lincoln

- Cultured cells to study how to mimic the columnar growth of cartilage cells found in the body
- Developed a microfluidic device to create micrometer scale alginate fibers to induce columnar growth of the cells

Research Volunteer 2012-2013

Pannier Lab**,** University of Nebraska—Lincoln, Lincoln, NE

- Performed lab maintenance

SOCIETIES AND MEMBERSHIPS

- Biomedical Engineering Society, University of Nebraska—Lincoln, 2014
- Chemistry Club, University of Nebraska—Lincoln, 2013-2014
- Phi Sigma Pi Honors Fraternity, University of Nebraska—Lincoln, 2010-2014
    - Homecoming Chair, Assistant Initiate Advisor, Secretary

PRESENTATIONS

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Shih HJS, **Trejo L**, Rowley KM, and Kulig K. (2018) Mechanism of metatarsophalangeal joint overload in dancers with flexor hallucis longus tendinopathy. *International Association for Dance Medicine and Science*, Helsinki, Finland. Podium.

Trejo L, Shih HJS, Rowley KM, Kulig K. (2018) Dancers with unilateral FHL tendinopathy show signs of overuse during the propulsive phase of sautés. *8th World Congress of Biomechanics*. Dublin, Ireland. July 2018. Podium

Sanchez N, **Trejo L**, Finley J. (2017) The capacity to voluntarily modify asymmetry and reduce metabolic cost in people post-stroke depends on the direction of baseline asymmetry. *2017 Annual Meeting Society for Neuroscience*. Washington, DC, USA. November 11-15, 2017.

Shih HJS, **Trejo L**, Rowley KM, Jarvis DN, Kulig K. (2017) Investigating potential mechanisms of overuse in dancers with flexor hallucis longus tendinopathy. *The 26th Congress of the International Society of Biomechanics*. Brisbane, Australia. July, 2017. Poster. *Listed for the David Winter Young Investigator Awards.

Sanchez N, Liu C, **Trejo L**, Finley J. (2017) Explicit modification of step length asymmetry modifies the metabolic cost of walking post-stroke. *Jacqueline Perry research day*. Division of Biokinesiology and Physical Therapy, University of Southern California. Los Angeles, CA, USA. April 16, 2017 Poster.

Shih HJS, **Trejo L**, Rowley KM, Jarvis DN, Kulig K. (2017) Overuse mechanisms in a dancer with flexor hallucis longus tendinopathy. *Herman Ostrow School of Dentistry research day.* University of Southern California. Los Angeles, CA, USA. Poster. *Finished 3rd in pre-candidate poster judging.

Buster TW, Burnfield JM, Irons SL, Nelson CA, **Trejo LH**, Leutzinger TJ (2016). Pediatric walking vs. training on a prototype motor-assisted elliptical: Kinematic and EMG comparisons at self-selected fast speeds. *Conference proceedings, 2016 Annual Meeting Gait and Clinical Movement Analysis Society*. Memphis, TN, USA. May 17-20, 2016.

Trejo LH, Buster TW, Stolle CJ, Nelson CA, Burnfield JM (2014) Influence of rocker and crank arm lengths on Intelligently Controlled Assistive Rehabilitation Elliptical (ICARE) coupler trajectories. *Midwest Biomedical Engineering Career Conference, Wayne State University.* Detroit, MI, USA. November 7, 2014. Poster.

Trejo, LH., Pannier AK (2014) A three-dimensional matrix with appropriate biomechanics will establish an in vitro model of native growth plate cartilage that includes the formation of proliferative chondrocyte columns as seen *in vivo*. *UNL Spring Research Fair, University of Nebraska—Lincoln.* Lincoln, NE, USA. April 16, 2014. Poster.

SKILLS

- Matlab
- Qualisys Motion Capture System
- Visual 3D
- Microsoft Office Word, Excel, and PowerPoint
- Cell Culture
- Electroencephalography Setup