MEGAN EBERS

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EDUCATION

UNIVERSITY OF WASHINGTON   Seattle, WA
Ph.D., Mechanical Engineering   *Expected June 2023*
M.S., Applied Mathematics   *Expected June 2021*
M.S., Mechanical Engineering   *June 2020*

COLORADO SCHOOL OF MINES,   Golden, CO
B.S., Mechanical Engineering, Magna Cum Laude   *May 2018*
     Minor: Biomechanical Engineering

AWARDS & HONORS

National Science Foundation Graduate Research Fellow   *Spring 2019*
   "Predicting Locomotor Response to Exoskeleton Augmentation: Data-Driven Motor Control"
Sigma Xi Scientific Research Honor Society   *Fall 2018*
E-Days Engineer Award   *Spring 2018*
Michael R. and Patricia K. Starzer Endowment Scholar   *Fall 2015*
Don L. and Patricia Warner Scholarship Fund for the Board of Trustees Honors Scholar *Fall 2014*
Mines Presidential Merit Scholar   *Fall 2014*

RESEARCH

Altered Control in Bipedal Locomotion   *Sept 2018 – present*
Ability & Innovation Lab, University of Washington
   Co-advisor: Katherine M. Steele
Kutz Research Group, University of Washington
   Co-advisor: J. Nathan Kutz
     Data-driven approaches to predict changes in movement after brain injury

Exoskeleton Emulation   *Aug 2016 – May 2017*
Biomechatronics Research Laboratory, Colorado School of Mines
   Advisor: Dr. Ozkan Celik
     Development of lower extremity exoskeleton emulator aiding stroke-recovery patients with hemiparesis

TEACHING & MENTORING

Graduate Mentor, Ability & Innovation Lab, University of Washington
Qilang (Damon) Ding - UW ME senior undergraduate student   *Sept 2019 – June 2020*
   UWIN Innovation Undergrad Fellowship awarded Fall 2019

Solid Mechanics Tutor, Colorado School of Mines   *Spring 2018*

PEER-REVIEWED JOURNAL ARTICLES

Megan Ebers, J. Nathan Kutz, Katherine M. Steele. *Biomechanically-Constrained Machine Learning for Human Mobility Rehabilitation.* 2020 (*in preparation*)

PEER-REVIEWED CONFERENCE ABSTRACTS

American Society of Biomechanics (virtual)   *August 2020*
Biomechanically-Constrained Machine Learning for the Identification of Mechanistic Discrepancies

Dynamic Walking (virtual)   *May 2020*
Discrepancy Modeling in Bipedal Dynamics

International Society of Biomechanics *August 2018*
Do Simulated Synergies Accurately Represent Muscle Coordination?

Northwest Biomechanics Symposium *May 2018*
Evaluating Altered Muscle Synergies Following Surgical Intervention in Cerebral Palsy Using Matrix Factorization Algorithms

Rocky Mountain American Society of Biomechanics *March 2017*
The Design and Validation of a Passive Foot Prosthesis with Adjustable Plantarflexion

PROFESSIONAL EXPERIENCE

Medtronic Boulder, CO
Specialty Exploration Mechanical Engineering Intern *Summer 2018*
    Creation and development of new, minimally-invasive technologies for surgical innovations

Medtronic Louisville, CO
Neurosurgical Navigation Hardware Test Engineering Intern *Summer 2017*
    Explored feasibility of automating optical hardware accuracy testing for neurosurgical navigation

Prytime Medical Devices, Inc Lakewood, CO
Engineering Intern *Autumn 2017*
    Developed REBOA (Resuscitative Endovascular Balloon Occlusion of the Aorta) catheter and pulsatile simulator

Procter and Gamble Cincinnati, OH
R&D Process Engineering Intern *Summer 2016*
    Optimized material characterization product design and process capability of Swiffer Surface Care substrates

Procter and Gamble Cincinnati, OH
R&D Products Research Intern *Summer 2015*
    Researched and developed consumer-friendly claims and methods for Gain laundry detergent

OUTREACH

Engineering Discovery Days, University of Washington *Spring 2019*
STEM Mentor for High School girls, Holdingford Jr./Sr. High, MN *Winter 2016 - present*

SKILLS & COURSEWORK

Computer: Matlab, OpenSim, LaTeX, SolidWorks (Associate Certified), Creo (Pro-E), Nessus, ABAQUS, Minitab, Mastercam CAD/CAM, Solidworks Flow Simulation, Computational Fluid Dynamics

Coursework: *Graduate Level:* Mechanical Engineering Analysis I & II (ODEs, PDEs); Scientific Computing; Bio-Inspired Robotics; Biomechanics of Human Movement; Computational Methods for Data Analysis; Inferring Structure of Complex Systems; Automatic Controls; Linear Systems Theory; Applied Complex Analysis; Advanced Methods for ODEs; Machine Learning Control