Kassidy Knutson
Curriculum Vitae

Contact Information:
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Education:

August 2021 –	University of Utah PhD Mechanical Engineering Dissertation Title: "*Flatfoot deformity diagnosis, treatment and surgical outcomes in patients with and without neurological involvement*" Advisor: Amy L. Lenz, PhD
August 2019 – December 2020	Colorado School of Mines MS Mechanical Engineering Advisor: Anne Silverman, PhD
August 2017 – May 2019	Colorado School of Mines BS Mechanical Engineering Senior Capstone Title: *"Prosthetic Arm Shooting Assistance"* Advisor: Anne Silverman, PhD
August 2013 – December 2015	South Dakota School of Mines and Technology BS Mechanical Engineering, Transferred Advisor: Marius D. Ellingsen, PhD

Professional Experience:

December 2020 – August 2021	Research Assistant/Analyst Orthopaedic Research Laboratory Department of Orthopaedics, University of Utah
August 2018 – May 2019	Project Lead, Client Advocate Senior Capstone Design Colorado School of Mines
May 2017 – August 2017	Mechanical Engineering Field Intern BlueWater Solutions Group, Berkeley, CA
August 2016 – May 2017	Manufacturing Technician Denver Metal Finishing, Denver, CO

January 2016 – August 2016 Mechanical Engineering Co-op, Project Engineer Co-op
Kimberly-Clark Corporation, Beech Island, SC

May 2015 – August 2015 Mechanical Engineering Field Intern
Lafarge Paulding Cement Plant, Paulding, OH

Research/Technical Experience:

Colorado School of Mines – Biomechanics Research Laboratory

Project: Adaptive Equipment Coursework
Software: SOLIDWORKS

Project: Modeling and Simulation in Biomechanics Coursework
Software: OpenSim 4.0, MATLAB

Project: Experimental Biomechanics Coursework
Equipment: Qualisys Motion Capture, Delsys EMG, AMTI Force Plates
Software: QTM, MATLAB, Microsoft Excel

Project: Summer Biomechanics Research 2018
Software: Abaqus, MATLAB

Colorado School of Mines Machine Shop

Project: Senior Capstone Design – Prosthetic Arm Shooting Assistance Device
Equipment: CNC Lathe, CNC Mill, Drill Press, Sanding Station
Software: SOLIDWORKS, CAM Software

Honors and Awards:

Dean's Honor List: Mechanical Engineering (Fall 2019)
CSM Capstone Design Showcase Best of Award for Professionalism (Spring 2019)
SDSMT Cross Country Athletic Scholarship (Fall 2013 – December 2015)
SDSMT Track and Field Athletic Scholarship (Fall 2013 – December 2015)

Professional Memberships

Society of Women Engineers (2018 – present)
Women in Science and Engineering (2018 - 2019)
Big Brothers Big Sisters – Mentor (2014 – 2015)

Teaching Experience:

Teaching Assistantship

MEGN 324 Computer Aided Engineering/Intro to Finite Element Analysis (2018, 2020)
MEGN 301 Mechanical Integration and Design (2019-2020)
MEGN 312 Solid Mechanics (2018-2019)

Tutoring

August 2017 – May 2018 Tutor in Learning Center of Red Rocks Community College
Topics: Algebra, Trigonometry, Calculus, Differential Equations

Outreach:

Heart to Heart Children's Village Medical Mission Trip to Honduras (2019)
Big Brothers Big Sisters Mentor (2014-2015)

Conference Proceedings:

1. **Knutson, K**., Peterson, A. C., Krähenbühl, N., Lisonbee, R. J., Lenz, A. L. Characterizing Progressive Collapsing Foot Deformity: A Multi-Domain Statistical Shape Modeling Approach, Podium Presentation for the *Orthopaedic Research Society*, Dallas, TX, February 2023.
2. **Knutson, K**., Krzak, J. J., Kruger, K. M., Lenz, A. L., Statistical Shape Model of Post Lateral Column Lengthening Adult Cerebral Palsy Flatfoot, Poster Presentation for *Orthopaedic Research Society,* Dallas, TX, February 2023
3. **Knutson, K**., Leonard, T., Aragon, K. C., Muhlrad, E. P., Anderson, A. M., Eatough, Z. J., MacWilliams, B. A., Kruger, K. M., Lenz, A. L. Talar and Calcaneal Coordinate Axes Definitions Across Foot Pathologies, Poster Presentation for the *Orthopaedic Research Society*, Dallas, TX, February 2023
4. Perez, K. N., Lisonbee, R. J., **Knutson, K**., Lenz, A. L. A Cadaveric Validation for Weightbearing CT Imaging Techniques for Improved Foot and Ankle Image Analysis and Diagnostics, Poster Presentation for the *Orthopaedic Research Society,* Dallas, TX, February 2023
5. Schmeichel, S., **Knutson, K.,** Peterson, A. C., Lisonbee, R. J., Lenz, A. L., Barg, A., Hintermann, B., Krähenbühl, N. Assessment of Peritalar Joint Subluxation in Flatfoot Deformity. Poster Presentation for the *82nd Annual Swiss Orthopaedics Congress,* June 2022
6. **Knutson, K**., Peterson, A. C., Krähenbühl, N., Lisonbee, R. J., Lenz, A. L., Coverage Analysis of the Subtalar and Talonavicular Joints in Progressive Collapsing Foot Deformity. Poster Presentation for the *Rocky Mountain ASB Regional Meeting*, Estes Park, CO, April 2022.
7. Perez, K. N., Lisonbee, R. J., **Knutson, K**., Lenz, A. L. Comparison of High-Resolution Biplane Fluoroscopy Model-Based Tracking Kinematics for Conventional CT versus Weightbearing CT Imaging Techniques: A Cadaveric Evaluation, Poster Presentation for the *Rocky Mountain ASB Regional Meeting*, Estes Park, CO, April 2022.
8. **Knutson, K**., Peterson, A. C., Krähenbühl, N., Lisonbee, R. J., Barg, A., Saltzman, C. L., Lenz, A. L. Joint Coverage Analysis of the Subtalar and Talonavicular Joints in Progressive Collapsing Foot Deformity, Podium Presentation for the *Orthopaedic Research Society*, Tampa, FL, February 2022.
9. Anderson, A. M., Muhlrad, E. P., Aragon, K. C., Leonard, T., **Knutson, K**., Krzak, J. J., MacWilliams, B. A., Lenz, A. L., Kruger, K. M. Comparison of Talar and Calcaneal Coordinate Axes Definitions Across Foot Pathologies, Poster Presentation for the *Orthopaedic Research Society*, Tampa, FL, February 2022
10. Honegger, J. D., Hall, B. M., **Knutson, K.,** Lo, A. Y., Nobarani, H., Pathare, N. B., Ziegler, N. C., Petrella, A. J., Sensitivity of Lumbar Spine Mechanics to Variations in Intervertebral Disc Hyperelastic Material Parameters Using a Finite Element Model of a Functional Spinal Unit, Accepted as a Poster for *Orthopaedic Research Society*, February 2019.

Professional References:

Amy L. Lenz, PhD
University of Utah
University Orthopaedic Center
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