Anthony H. Le

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Education

PhD in Biomedical Engineering **Expected Aug 2025**
University of Utah *Salt Lake City, UT, USA*

- Proposed Dissertation: "Robotic Cadaveric Simulation for Characterizing Foot and Ankle Biomechanics"
  Advisor: Dr. Amy L. Lenz
  Committee Members: Drs. Health B. Henninger, Lucas H. Timmins, Jeffrey A. Weiss, Robert W. Hitchcock
- Honors/Leadership: Vice President/Treasurer, American Society of Biomechanics Uath Student Chapter; Treasurer, BME Graduate Student Advisory Committee

MS in Bioengineering, Minor in Robotics **Dec 2020**
Oregon State University *Corvallis, OR, USA*

- Thesis: "Biomechanical Modeling of Isometric Muscle-Tendon Force Generation Through Tendons Coupled in Parallel and a Passive Differential Mechanism"
  Co-Advisors: Drs. Ravi Balasubramanian and James D. Sweeney
  Committee Members: Drs. William D. Smart, Adam Z. Higgins, David P. Cann
- Honors/Leadership: Co-Founder & Co-President, Robotics Graduate Student Association; BioE Chairman, CBEE Graduate Student Association; OMSI Science Communication Fellowship; ORS Blue Ribbon Poster Award; ORISE Research Fellowship

BS in Chemistry, Minor in Applied Mathematics **May 2015**
Wofford College *Spartanburg, SC, USA*

- Honors/Leadership: Paul Calvert Thomas Endowed Chemistry Scholarship; Dean's List; President, Sigma Nu Fraternity; Co-Chair, Orientation Staff; Alpha Phi Omega; Peer Tutor
- Study Abroad: Queen Mary University of London, London, England; Buenos Aires, Argentina; Little Cayman, Cayman Islands

Research Experiences

Graduate Research Assistant **Jan 2022–Present**
Orthopaedic Research Laboratory, University of Utah School of Medicine *Salt Lake City, UT, USA*

- Developed a robotic simulator for replicating motion in a human cadaveric foot and ankle model using an industrial robot driven with *in vivo* biplane fluoroscopy data (Fanuc M-20iA)
- Evaluated the subtalar kinematic compensations after tibiotalar arthrodesis and total ankle replacement
- Integrated muscle actuators and a ground reaction force plate to the robotic simulator and validated *in vitro* subtalar kinematics against *in vivo* observations
- Performed computational statistical shape modeling of the foot and ankle to evaluate the morphological influences on ankle kinematics after tibiotalar arthrodesis and total ankle replacement (ShapeWorks)
- Examined the effects of sex and laterality on tibial morphology using computational statistical shape modeling (ShapeWorks)

Research Analyst **Oct–Dec 2021**
Orthopaedic Research Laboratory, University of Utah School of Medicine *Salt Lake City, UT, USA*

- Conducted literature reviews on subtalar joint kinematics, kinetics, morphology, and instability; ankle arthrodesis; total ankle replacement; and robotic simulators in biomechanics
- Designed a testing fixture for attaching a human cadaveric tibia to an industrial robot end effector and bone pins for mounting infrared marker arrays for motion capture

Musculoskeletal Tissue Biomechanist Research Fellow **Mar 2020–Sept 2021**
DoD-VA Extremity Trauma and Amputation Center of Excellence, Walter Reed NMMC *Bethesda, MD, USA*

- Compared biomechanical properties of high-tensile strength suture vs. high-tensile strength tape across two different stitching techniques under cyclic loading in human cadaveric tendons
- Developed linear mixed model with experimental data that revealed how high-tensile strength tape in a Krackow stitch was the best suture construct for tendon repair (R)
- Evaluated biomechanics of ulnar collateral ligament reconstruction with different bone tunnel orientations under cyclic valgus loading and load-to-failure testing in human cadaveric elbows

- Assessed effects of posterior thoracic spine fusions on 3D vertebral kinematics in flexion-extension, lateral bending, and axial rotation motions using pure torque bending tests and motion capture in human cadaveric spines
- Demonstrated changes in peak contact pressures and pressure locations on tibial plateau in knee joint before and after ACL injury and reconstruction at various joint angles under static and dynamic loads in human cadaveric knees

Graduate Research Assistant **Sept 2016–Mar 2020**
Robotics & Human Control Systems Laboratory, Oregon State University MIME *Corvallis, OR, USA*

- Formulated IACUC-approved Animal Care and Use Protocols for validating novel implantable passive mechanisms in chicken and rabbit models
- Established design of experiment to measure isometric muscle force generation, joint torques, and joint kinematics using intramuscular functional electrical stimulation, load cells, and motion capture in live chicken and rabbit models
- Fabricated custom fixtures to interface miniature load cells with chicken foot anatomy in order to measure multiple toe tip forces simultaneously
- Built biomechanical models for simulating isometric muscle force generation through two tendons coupled in parallel and a passive differential mechanism using direct stiffness method (MATLAB)
- Managed 2 undergraduate research assistants in designing apparatuses and processing kinetic and kinematic data (MATLAB, R)

Undergraduate Research Assistant **Apr–Sept 2016**
Tomasino Laboratory, Oregon State University Food Science and Technology *Corvallis, OR, USA*

- Analyzed organic chemistry of grapes juice to predict resultant wine characteristics in production using high-throughput FT-IR and FT-NIR spectroscopy
- Isolated and purified polysaccharides from wines and grape pomace to evaluate value-added mouthfeel profiles for R&D projects related to the Dark Horse Wine brand using high-throughput HPLC
- Operated resin column in down-flow configuration to extract quercetin glycosides and other polyphenols from Muscat grape juice for white wine product development projects

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Industry Experiences

Chemistry Research Intern **Jun–Nov 2015**
E. & J. Gallo Research Laboratory *Modesto, CA, USA*

- Analyzed the organic chemistry of grapes using high-throughput FT-IR and FT-NIR spectroscopy
- Isolated and purified polysaccharides from wines and grape pomace for value-added mouthfeel projects
- Implemented a resin column in down-flow configuration to extract quercetin glycosides and other polyphenols from Muscat grape juice for product development projects

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Teaching Experiences

CBEE 414: Process Engineering Lab **Sept–Dec 2019**
Graduate Teaching Assistant
Professors: Natasha Mallette, Elain Fu, Kaichang Li

- Held writing help sessions for 4 hours per week for students looking to improve their writing skills for more concise and effective dissemination of their work
- Graded assignments ranging from short 1-page writing assignments to long technical lab reports (Canvas, SpeedGrader)

Peer-Reviewed Journal Publications

1. PK Mescher, TP Murphy, **AH Le**, DF Colantonio, D Rodkey, CH Renninger. "Fully Threaded Screws Provide Superior Fixation in Femoral Neck Fracture Fixation Compared to Partially Threaded Screws: A Biomechanical Study," *Injury, Submitted Mar 2023*
2. JK Carver, **AH Le**, DF Colantonio, RM Putko, DL Rodkey, MB Bird, WB Roach, CJ Tucker, JF Dickens, BD Hendershot, MD Helgeson, TC Mauntel. "Alterations in Tibiofemoral Contact Pressures Following Anterior Cruciate Ligament and Meniscus Injuries and Surgical Interventions," *Arthroscopy, Submitted Mar 2023*
3. DF Colantonio, **AH Le**, AJ Pisano, JM Chung, SC Wagner, DR Fredericks, WB Roach, CD Schlaff, A Dill, MD Helge-

son. "Hooks Versus Pedicle Screws at the Upper Instrumented Level: An *In Vitro* Biomechanical Comparison," *Spine, Published Apr 2023*

4. TP Murphy, DF Colantonio, **AH Le**, DR Fredericks, CD Schlaff, EB Holm, AS Sebastian, AJ Pisano, MD Helgeson, SC Wagner. "Biomechanical Analysis of Multilevel Posterior Cervical Spinal Fusion Constructs," *Clin Spine Surg, Published Feb 2023*
5. DF Colantonio, RK Kicklighter, **AH Le**, MA Nowicki, MA Posner, LF Zhou, SM Gee. "Subcortical Backup Tibial Fixation in ACL Reconstruction has Similar Maximal Strength to Current Techniques," *Arthrosc Sports Med Rehabil, Published Feb 2023*
6. DF Colantonio, CJ Tucker, TP Murphy, PK Mescher, **AH Le**, RM Putko, ER Holm, R Weishar, TK Vippa, TN Rubic, ES Chang. "All-Suture Suspensory Button Has Similar Biomechanical Performance to Metal Suspensory Button for Onlay Subpectoral Biceps Tenodesis," *Arthrosc Sports Med Rehabil, Published Dec 2022*
7. A Lundy, DF Colantonio, **AH Le**, RC Lee, AS Piscoya, E Holm, TT Eckel. "Biomechanical Changes in the Ankle Joint after Syndesmosis and Deltoid Injury and Subsequent Repair in a Cadaveric Model," *Foot Ankle Orthop, Published Nov 2022*
8. ES Chang, **AH Le**, AM Looney, WB Roach, MD Helgeson, DM Clark, DR Fredericks, S Nagda. "Biomechanical Comparison of Anatomic Restoration of the Ulnar Footprint Versus Traditional Ulnar Tunnels in Ulnar Collateral Ligament Reconstruction," *Am J Sports Med, Published Apr 2022*
9. DF Colantonio, **AH Le**, LE Keeling, SE Slaven, T Vippa, MD Helgeson, ES Chang. "Intramedullary Unicortical Button and All-Suture Anchors Provide Similar Maximum Strength for Onlay Distal Biceps Tendon Repair," *Arthroscopy, Published Feb 2022*
10. **AH Le**, WB Roach, TC Mauntel, BD Hendershot, MD Helgeson, DF Colantonio, DR Fredericks, SE Slaven, AJ Pisano, LE LeClere. "A Biomechanical Comparison of High-Tensile Strength Tape Versus High-Tensile Strength Suture for Tendon Fixation Under Cyclic Loading," *Arthroscopy, Published Sept 2021*
11. GR Browning, **AH Le**, JJ Warnock, R Balasubramanian. "An Investigation of a Novel Tendon Transfer Surgery for High Median-Ulnar Nerve Palsy in a Chicken Model," *J Invest Surg, Published Oct 2017*

Conference Presentations

Podiums

1. **AH Le**, JA Larrea Rodriguez, AL Lenz. "Windlass Mechanism Engagement Influences Calcaneocuboid Joint Kinematics Within a Robotic-Driven Tibial Movement Envelope: A Preliminary Study," *XXIX Congress of International Society of Biomechanics, Fukuoka, JPN, Aug 2023*
2. DF Colantonio, CJ Tucker, TP Murphy, PK Mescher, **AH Le**, RM Putko, E Holm, RC Weishar, TK Vippa, ES Chang. "Novel All-Suture Button Has Similar Biomechanical Performance to Metal Suspensory Button for Onlay Subpectoral Biceps Tenodesis," *64th Annual Meeting of the Society of Military Orthopaedic Surgeons, Scottsdale, AZ, USA, Dec 2022*
3. PK Mescher, TP Murphy, **AH Le**, DF Colantonio, D Rodkey, S Ghenbot, E Rich, CH Renninger. "Fully Threaded Screws Provide Superior Fixation in Femoral Neck Fracture Fixation Compared to Partially Threaded Screws: A Biomechanical Study," *64th Annual Meeting of the Society of Military Orthopaedic Surgeons, Scottsdale, AZ, USA, Dec 2022*
4. JL Carver, **AH Le**, DF Colantonio, WB Roach, CJ Tucker, JF Dickens, BD Hendershot, MD Helgeson, TC Mauntel. "Knee Joint Peak Contact Pressure Location Following ACL and Meniscus Injuries and Surgical Treatments," *2022 Womack Army Medical Center Research Symposium, Fort Bragg, NC, USA, May 2022*
5. PK Mescher, TP Murphy, **AH Le**, DF Colantonio, D Rodkey, CH Renninger. "Biomechanical Evaluation of Fully Versus Partially Threaded Cannulated Screw Fixation of Transcervical Femoral Neck Fractures," *2022 Annual Meeting of the Orthopaedic Trauma Association, Tampa, FL, USA, Oct 2022*
6. AE Lundy, DF Colantonio, **AH Le**, R Lee, AS Piscoya, E Holm, TT Eckel. "Biomechanical Changes in the Ankle Joint After Syndesmosis and Deltoid Injury and Subsequent Repairs in a Cadaveric Model," *2022 Annual Meeting of the American Orthopaedic Foot and Ankle Society, Quebec City, QC, CA, Sept 2022*
7. AE Lundy, DF Colantonio, **AH Le**, R Lee, AS Piscoya, E Holm, TT Eckel. "Biomechanical Changes in the Ankle

Joint After Syndesmosis and Deltoid Injury and Subsequent Repairs," *2022 Annual Meeting of the Arthroscopy Association of North America, San Francisco, CA, USA, May 2022*

8. PK Mescher, TP Murphy, **AH Le**, DF Colantonio, D Rodkey, CH Renninger. "Biomechanical Evaluation of Fully Versus Partially Threaded Cannulated Screw Fixation of Transcervical Femoral Neck Fractures," *75th Annual Meeting of the Virginia Orthopaedic Society, White Sulphur Sprrings, WV, USA, Apr 2022*
9. AE Lundy, DF Colantonio, **AH Le**, R Lee, AS Piscoya, E Holm, TT Eckel. "Biomechanical Changes in the Ankle Joint After Syndesmosis and Deltoid Injury and Subsequent Repairs," *2022 Annual Meeting of the American Orthopaedic Society for Sports Medicine, Chicago, IL, USA, Mar 2022*
10. ES Chang, **AH Le**, AM Looney, WB Roach, MD Helgeson, DM Clark, DR Fredericks, S Nagda. "Biomechanical Comparison of Anatomic Restoration of the Ulnar Footprint Versus Traditional Ulnar Tunnels in Ulnar Collateral Ligament Reconstruction," *2022 Annual Meeting of the American Orthopaedic Society for Sports Medicine/2022 Specialty Day, Chicago, IL, USA, Mar 2022*
11. AE Lundy, DF Colantonio, **AH Le**, R Lee, AS Piscoya, E Holm, TT Eckel. "Tibiotalar Contact Pressures and Torsional Stability following Syndesmosis and Deltoid Ligament Injury and Repair," *63rd Annual Meeting of the Society of Military Orthopaedic Surgeons, Olympic Valley, CA, USA, Dec 2021*
12. DF Colantonio, **AH Le**, DR Fredericks, JM Chung, A Dill, AJ Pisano, MD Helgeson, A Sebastian, SC Wagner, S Rabin. "Effects of Drill Technique and Burr Size on Insertional Torque and Pullout Strength of Lateral Mass Screw Fixation," *63rd Annual Meeting of the Society of Military Orthopaedic Surgeons, Olympic Valley, CA, USA, Dec 2021*
13. TP Murphy, DF Colantonio, **AH Le**, SC Wagner, DR Fredericks, WB Roach, JM Chung, AF Pisano, MD Helgeson. "Biomechanical Comparison of Anterior Plate Fixation vs. Integrated Fixation Cage for Anterior Cervical Discectomy and Fusion," *63rd Annual Meeting of the Society of Military Orthopaedic Surgeons, Olympic Valley, CA, USA, Dec 2021*
14. TP Murphy, DF Colantonio, **AH Le**, DR Fredericks, CD Schlaff, E Holm, MD Helgeson, SC Wagner. "Biomechanical Analysis of the Cervicothoracic Junction in Long Posterior Cervical Fusion Constructs," *63rd Annual Meeting of the Society of Military Orthopaedic Surgeons, Olympic Valley, CA, USA, Dec 2021*
15. RE Kinnison, DF Colantonio, **AH Le**, MA Posner, MA Nowicki, SM Gee, RM Putko. "Novel Intramedullary Suture Button Technique has Similar Maximal Strength to Bicortical Post for Secondary ACL Graft Fixation," *63rd Annual Meeting of the Society of Military Orthopaedic Surgeons, Olympic Valley, CA, USA, Dec 2021*
16. ES Chang, DF Colantonio, **AH Le**, AM Looney, WB Roach, DM Clark, DR Fredericks, MD Helgeson, S Nagda. "Biomechanical Comparison of Anatomic Restoration of the Ulnar Footprint vs. Traditional Ulnar Tunnels in Ulnar Collateral Ligament Reconstruction," *63rd Annual Meeting of the Society of Military Orthopaedic Surgeons, Olympic Valley, CA, USA, Dec 2021*
17. DF Colantonio, **AH Le**, AJ Pisano, SC Wagner, DR Fredericks, WB Roach, CD Schlaff, MD Helgeson. "Hooks vs. Pedicle Screws at Upper Level of Long Fusion Constructs," *63rd Annual Meeting of the Society of Military Orthopaedic Surgeons, Olympic Valley, CA, USA, Dec 2021*
18. DF Colantonio, **AH Le**, LE Keeling, SE Slaven, MD Helgeson, ES Chang, H Gibbs. "Biomechanical Comparison of Onlay Distal Biceps Repair: Intramedullary Button vs. All-Suture Anchors," *63rd Annual Meeting of the Society of Military Orthopaedic Surgeons, Olympic Valley, CA, USA, Dec 2021*
19. DF Colantonio, **AH Le**, WB Roach, JM Chung, DR Fredericks, AJ Pisano, SC Wagner, MD Helgeson. "Posterior Thoracic Spine Construct Stiffness Under Cyclic Load: An *In Vitro* Biomechanical Comparison of Hooks vs. Pedicle Screws," *14th Annual Meeting of the Lumbar Spine Research Society, Virtual, Apr 2021*
20. **AH Le**, WB Roach, TC Mauntel, BD Hendershot, MD Helgeson, AJ Pisano, LE LeClere. "An *In Vitro* Biomechanical Comparison of Suture Constructs for Acute Tendon Rupture Repairs Under Cyclic Loading," *62nd Annual Meeting of the Society of Military Orthopaedic Surgeons, Virtual, Dec 2020*
21. **AH Le**, J Casebier, J Mandich, JJ Warnock, JD Sweeney, R Balasubramanian. "Evaluation of Postoperative Healing for Novel Tendon Transfer Surgery Using an Implantable Passive Mechanism: A Pilot *In Vivo* Study," *44th Annual Veterinary Orthopedic Society Conference, Snowbird, UT, USA, Mar 2017*

Posters

1. **AH Le**, JA Larrea Rodriguez, AL Lenz. "Windlass Mechanism Engagement Influences Calcaneocuboid Joint Kinematics Within a Robotic-Driven Tibial Movement Envelope: A Preliminary Study," *13th Annual Meeting of the*

Rocky Mountain American Society of Biomechanics, Estes Park, CO, USA, April 2023

2. **AH Le**, RJ Lisonbee, JA Larrea Rodriguez, AL Lenz. "Effect of Windlass Mechanism Engagement on Hindfoot and Midfoot Kinematics Within a Robotic-Driven Tibial Movement Envelope: A Preliminary Study," *Orthopaedic Research Society 2023 Annual Meeting, Dallas, TX, USA, Feb 2023*
3. **AH Le**, HB Henninger, KN Bachus, AL Lenz. "Statistical Shape Modeling of the Tibia to Inform Mounting Position in a BioRobotic Foot and Ankle Simulator," *12th Annual Meeting of the Rocky Mountain American Society of Biomechanics, Estes Park, CO, USA, Apr 2022*
4. DF Colantonio, CJ Tucker, **AH Le**, PK Mescher, TP Murphy, RM Putko, E Holm, R Weishar, T Rubic, T Vippa, ES Chang. "Biomechanical Comparison of Novel All-Suture Button vs Metal Button for Subpectoral Biceps Tenodesis," *2022 Annual Meeting of the Arthroscopy Association of North America, San Francisco, CA, USA, May 2022*
5. TP Murphy, **AH Le**, DF Colantonio, DR Fredericks, JM Chung, WB Roach, AJ Pisano, MD Helgeson, SC Wagner. "Effects of Drill Technique and Burr Size on Insertional Torque and Pullout Strength of Lateral Mass Screw Fixation," *2022 Annual Meeting of the American Academy of Orthopaedic Surgeons, Chicago, IL, USA, Mar 2022*
6. TP Murphy, DF Colantonio, **AH Le**, DR Fredericks, CD Schlaff, E Holm, MD Helgeson, SC Wagner. "Biomechanical Analysis of the Cervicothoracic Junction in Long Posterior Cervical Fusion Constructs," *2022 Annual Meeting of the American Academy of Orthopaedic Surgeons, Chicago, IL, USA, Mar 2022*
7. **AH Le**, JD Sweeney, R Balasubramanian. "Changes in Tendon Network Configuration Influences Joint Moment-Angle Characteristics: Implications of Tendon Transfers," *1st Annual Oregon Bioengineering Symposium, Corvallis, OR, USA, Nov 2019*
8. **AH Le**, JJ Warnock, JD Sweeney, R Balasubramanian. "Clinical Assessment of Functional Recovery After a Novel Tendon Transfer Surgery in a Chicken Model," *2018 Military Health Systems Research Symposium, Kissimmee, FL, USA, Aug 2018*
9. **AH Le**, JD Sweeney, R Balasubramanian. "Biomechanical Analysis of Toe Extension After a Novel Tendon Transfer Surgery for Implantable Passive Mechanisms," *40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Honolulu, HI, USA, Jul 2018*
10. LM Cavalcani, H Ling, **AH Le**, R Balasubramanian, VJ Mathews. "Improving Muscle Activation Efficiency of Functional Neuromuscular Stimulation Using a Passive Force-Scaling Implant," *43rd Neural Interfaces Conference, Minneapolis, MN, USA, Jun 2018*
11. **AH Le**, DS Russell, JJ Warnock, MK Larson, GR Browning, KA Fischer, JD Sweeney, R Balasubramanian. "Histopathological Healing Responses to a Novel Tendon Transfer Surgery in a Chicken Model," *2017 Military Health Systems Research Symposium, Kissimmee, FL, USA, Aug 2017*
12. **AH Le**, GR Browning, JJ Warnock, JD Sweeney, R Balasubramanian. "Evaluation of Gait Quality for a Novel Tendon Transfer Surgery in a Chicken Model," *13th Annual Northwest Biomechanics Symposium, Eugene, OR, USA, May 2017*

Workshops

1. **AH Le**, DS Russell, MK Larson, JJ Warnock, GR Browning, KA Fischer, JD Sweeney, R Balasubramanian. "Histopathological Analysis of Healing Responses to a Novel Tendon Transfer Surgery in a Chicken Model," *47th International ORS Musculoskeletal Biology Worshop, Sun Valley, ID, USA, Aug 2017*

Honors & Awards

Fellowships

Dean's Distinguished Graduate Fellowship (Declined) **Apr 2021**
University of California, Davis

Musculoskeletal Tissue Biomechanist Research Fellowship **Jan 2020**
Oak Ridge Institute for Science and Education

Science Communication Fellowship (Declined) **Nov 2018**

Oregon Museum of Science and Industry

Publication Awards

Best Doctoral Poster Presentation Award **Apr 2023**
Rocky Mountain American Society of Biomechanics

Arthroscopy Journal Award for Basic Science Research Excellence (Runner-Up) **Jan 2022**
Arthroscopy: The Journal of Arthroscopic and Related Surgery

Blue Ribbon Poster Award **Aug 2017**
Orthopaedic Research Society

Professional Engagements

Journal Reviews

Arthroscopy: The Journal of Arthroscopic and Related Surgery **2021–Present**

Society Memberships

Orthopaedic Research Society, *Member* **2017–2018**
IEEE, *Student Member* **2017–2018**
IEEE Engineering in Medicine and Biology Society, *Student Member* **2017–2018**
American Chemical Society, *Member* **2011–2015**

Training Courses

Fanuc Basic Programming, *Fanuc Corporation* **Feb 2022**
Series 793/MPT Introduction, *MTS Systems Corporation* **June 2020**
Series 793 Configuration, *MTS Systems Corporation* **June 2020**

University Engagements

American Society of Biomechanics Utah Student Chapter, *Vice President/Treasurer* **2022–Present**
Utah BME Graduate Student Advisory Committee, *Treasurer* **2021–Present**
Utah Graduate Women in Biomedical Engineering, *Member* **2021–Present**
OSU CBEE Graduate Student Association, *BioE Chairman* **2017–2018**
OSU Robotics Graduate Student Association, *Co-Founder & Co-President* **2016–2018**

Volunteering Experiences

WeDo Lego Robotics, *OSU STEM Academy, Corvallis, OR* **Apr 2016–Dec 2019**
Boy & Girls Club, *Corvallis, OR* **Apr–Sept 2016**
Makers Club, *Corvallis-Benton County Public Library, Corvallis, OR* **Apr–Sept 2016**
Relay for Life, *Wofford College, Spartanburg, SC* **Mar 2013, 2014, 2015**
Habitat for Humanity, *Spartanburg, SC* **Jan 2013, 2014**

News & Press

OSU College of Engineering **Sept 2019**
Momentum Magazine **Jun 2019**

Technical Skills

- Statistical Modeling & Analysis (MATLAB, R)
- Data Processing & Analysis (MATLAB, R, Python)
- Data Visualization (MATLAB, ggplot2, Matplotlib)
- Motion Capture (OptiTrack, Optotrak, Vicon)
- 3D Kinematic Analysis (MATLAB, Motive, First Principles)
- 3D Computer Assisted Design (Solidworks, Fusion 360)
- Custom Fabrication (3D Printing, CNC)
- Graphic Design (Adobe Illustrator)
- Finite Element Analysis (FEBio)
- Medical Image Processing & Visualization (Mimics)
- Biomechanical Modeling (MATLAB)
- Biomaterial & Medical Device Testing (MTS Bionix)
- Robotic Testing & Manipulation (Fanuc M-20iA)
- Human Anatomy & Physiology
- Surgical Procedure Terminology (Orthopaedics)
- Medical Device Knowledge
- Design of Experiment
- Regulatory Protocol Writing & Review (ACUP, IRB)
- Word Processing (Word, LaTeX)
- MS Office Suite (Word, Excel, PowerPoint)
- Technical Writing & Presentation
- Robot Operating System
- Linux, macOS, Windows