

# PENNY ATKINS, PH.D.

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## EDUCATION

Ph.D., Bioengineering, GPA: 3.93 Aug 2018  
University of Utah, Salt Lake City, UT, USA

*Dissertation Title: "Characterization of Cam Femoroacetabular Impingement using Subject-Specific Biomechanics and Population-Based Morphological Measurements"*

B.S. (Honors), Industrial Engineering, GPA: 3.62 May 2009  
Montana State University, Bozeman, MT, USA

## PROFESSIONAL EXPERIENCE

Associate Director November 2022 - Present

*One Utah Data Science Hub, University of Utah, Salt Lake City, Utah, USA*

Strategic planning, execution, and evaluation of data science initiatives in collaboration with One U Data Science faculty directors, steering committees, and stakeholders. Development of competitive collaborations through identification of complementary research interests among faculty as well as with other academic centers, health systems, and industry. Identification of federal, foundation, and corporation funding opportunities as well as new research priority areas and grand challenges. Facilitation, management, and contribution to the preparation of complex research proposals. Support of educational initiatives including workshops, trainings, and developing new curriculum with domain experts and organization of internal research community building events.

Research Associate November 2020 - April 2023

*Scientific Computing and Imaging Institute, University of Utah, Salt Lake City, Utah, USA*

Implementation of statistical analysis methods to evaluate spatially and temporally varying surface-based feature data relative to morphological variation captured through statistical shape modeling. Support of the development of ShapeWorks and FEBio Software Suite to expand functionality for new use-cases and improve ease-of-use. Assist in coordination of ongoing experimental research involving magnetic resonance imaging, dual fluoroscopy, and finite element analysis, as well as mentorship of graduate and undergraduate research assistants. Co-mentorship of graduate and undergraduate student research projects.

Postdoctoral Fellow July 2018 - October 2020

*Laboratory for Bone Biomechanics, Federal Institute of Technology (ETH), Zurich, Switzerland*

Developed image registration and analysis methods to evaluate bone resorption and formation in healing fractured and contralateral radius bones. Evaluated methods to quantify trabecular bone shape patterns towards defining the relationship between microstructure and remodeling. Coordinated clinical studies at Medical University of Innsbruck and University of Bern in the acquisition of time-lapsed high-resolution CT imaging data and blood samples.

Graduate Research Assistant July 2013 - June 2018

*Orthopaedic Research Laboratory, University of Utah, Salt Lake City, Utah, USA*

Designed and executed a project to elucidate the relationship between shape and function with respect to morphological abnormalities of the hip joint. Research incorporated experimental collection of CT and MRI imaging data and combined dual-fluoroscopy and skin marker motion capture for measurement of kinematic and kinetic data in combination with computational techniques of statistical shape modeling, finite element analysis, and model-based tracking of dual fluoroscopy images.

Engineer June 2009 - June 2013

*Bechtel Marine Propulsion Corporation, Idaho National Laboratory, Idaho Falls, Idaho, USA*

Assisted in the design of a new process line for packaging spent nuclear fuel with considerations for technical requirements, system integration, and human factors. Oversaw mechanical designs, managed technical requirements and project schedule, communicated project process with the executive team, and developed a systematic analysis of the existing process lines using discrete event simulation. Supported the transition to lean manufacturing through process improvement events as a Lean Six Sigma Green Belt and implemented agile project management as a certified Scrum Master.

Undergraduate Research Assistant Oct 2008 - May 2009

*Western Transportation Institute, Montana State University, Bozeman, Montana, USA*

Utilized of a six degree-of-freedom driving simulator in the design and execution of a human study to evaluate the use of a variety of notification modalities to warn drivers of bicyclists on the roadway. The research project was the first conducted using Western Transportation Institute's driving simulator.

### TEACHING EXPERIENCE

Co-Instructor, Physiology for Engineers, University of Utah Fall 2022

Prepared and presented undergraduate level course material for a 50-minute lecture three times per week for 80 students for the second half of the semester. Inclusion of active learning to improve student engagement and learning of topics. Coordinated two laboratory sessions, two homework assignments, and one exam.

Co-Instructor, BME Thesis Writing & Communication II, University of Utah Spring 2022

Participated in and guided discussion on the scientific writing and presentation process to provide students with the tools necessary to effectively communicate their senior thesis project, culminating in a poster presentation and finalization of their written thesis document. Provided both general and detailed individual feedback for nine students throughout the process of finalization of their written thesis and preparation of their poster presentation of their research. Executed individual 30-minute mentoring sessions for each student.

Co-Instructor, BME Thesis Writing & Communication I, University of Utah Fall 2021

Participated in and guided discussion on the scientific writing and presentation process, specifically for the introduction through results sections. This course focused on providing students the tools necessary to effectively communicate their thesis project during a 10-minute oral presentations and in a written thesis document. Provided both general and detailed individual feedback to a small group of seven students throughout the process of thesis writing. Executed individual 30-minute mentoring sessions for each student.

Lecturer, Orthopaedic Biomechanics, ETH Zurich Spring 2019 – Spring 2020

Prepared and presented graduate level course material for a weekly 120-minute lecture for 48 graduate students. Implemented enhanced learning materials to improve student engagement and learning of topics, including mechanical loading and analysis, fracture repair, and hip prosthetics. Co-executed 30-minute oral exams for each student.

Guest Lecturer, Introduction to Image Based Modeling, University of Utah Spring 2017, 2018

Prepared and presented course material on Advanced Image Segmentation, including an out-of-class exercise utilizing freely available segmentation and visualization software developed at the University of Utah.

Teaching Assistant, Biomechanics I, University of Utah Fall 2014

Prepared the laboratory activities and materials for a bi-monthly 120-minute lab session of 90 undergraduate students, which included mechanical testing, image processing, digitization for calculation of kinematics, and signal processing. Held weekly office hours to assist with laboratory reports and calculations. Created exercises for students to prepare for exams.

## PUBLICATIONS AND PRESENTATIONS

### Peer-Reviewed Publications

1. **Atkins PR**, Morris A, Elhabian SY, Anderson AE. A Correspondence-based Network Approach for Groupwise Analysis of Patient-Specific Spatiotemporal Data. *Ann Biomed Eng. In Press*.
2. Walle M, Whittier DE, Schenk D, **Atkins PR**, Blauth M, Zysset P, Lippuner K, Müller R, Collins CJ. Precision of Bone Mechanoregulation Assessment in Humans Using Longitudinal High-resolution Peripheral Quantitative Computed Tomography In Vivo. *Bone*. 172:116780, 2023.
3. Khan N, Peterson AC, Aubert B, Morris A, **Atkins PR**, Lenz AL, Anderson AE, Elhabian SY. Statistical Multi-Level Shape Models for Scalable Modeling of Multi-Organ Anatomies. *Front Bioeng Biotechnol*. 11:1089113, 2023.
4. Schuring LL, Mozingo JD, Lenz AL, Uemura K, **Atkins PR**, Fiorentino NM, Aoki SK, Peters CL, Anderson AE. Acetabular Labrum and Cartilage Contact Mechanics During Pivoting and Walking Tasks in Individuals with Cam Femoroacetabular Impingement Syndrome. *J Biomech*. 146:111424, 2023.
5. Peiffer M, Duquesne K, Van Olevelen A, Burssens A, De Mits S, Maas SA, **Atkins PR**, Anderson AE, Audenaert EA. Validation of a Personalized Ligament-Constraining Discrete Element Algorithm for Articular Ankle Joint Mechanics. *Comput Methods Programs Biomed*. 231:107366, 2023.
6. Walle M, Eggemann D, **Atkins PR**, Kendall JJ, Stock K, Müller R, Collins CJ. Motion Grading of High-resolution Quantitative Computed Tomography Supported by Deep Convolutional Neural Networks. *Bone*. 166:116607, 2023.
7. Collins CJ<sup>#</sup>, **Atkins PR**<sup>#</sup>, Ohs N, Blauth M, Lippuner K, Müller R. Clinical Observation of Diminished Bone Quality and Quantity through Longitudinal HR-pQCT-derived Remodeling and Mechanoregulation. *Scientific Reports*, 12(1):17960, 2022. <sup>#</sup>Equally contributing authors.
8. Lewis CL, Uemura K, **Atkins PR**, Lenz AL, Fiorentino NM, Aoki SK, Anderson AE. Patients with Cam-Type Femoroacetabular Impingement Demonstrate Increased Change in Bone-to-Bone Distance during Walking: A Dual Fluoroscopy Study. *Journal of Orthopaedic Research*, 41(1):161-169, 2023.
9. **Atkins PR**, Agrawal P, Mozingo JD, Uemura K, Tokunaga K, Peters CL, Elhabian SY, Whitaker RT, Anderson AE. Prediction of Femoral Head Coverage from Articulated Statistical Shape Models of Patients with Developmental Dysplasia of the Hip. *Journal of Orthopaedic Research*, 40(9):2113-26, 2022.
10. **Atkins PR**, Fiorentino NM, Anderson AE. In-vivo Quantification of Hip Arthrokinematics during Dynamic Weight-bearing Activities using Dual Fluoroscopy. *Journal of Visualized Experiments*. 173: e62792, 2021.
11. Ohs N, Collins CJ, Tourolle né Betts DC, **Atkins PR**, Schroeder B, Blauth M, Christen P, Müller R. Automated Segmentation of Fractured Distal Radii by 3D Geodesic Active Contouring of in vivo HR-pQCT Images. *Bone*. 147:115930, 2021.
12. **Atkins PR**, Stock K, Ohs N, Collins CJ, Horling L, Benedikt S, Degenhart G, Lippuner K, Blauth M, Christen P, Müller R. Formation Dominates Resorption with Increasing Mineralized Density and Time Post Fracture in Cortical but not Trabecular Bone: A Longitudinal HR-pQCT Imaging Study in the Distal Radius. *JBMR Plus*. 5(6): e10493, 2021.
13. **Atkins PR**, Hananouchi T, Anderson AE, Aoki SK. Inclusion of the Acetabular Labrum Reduces Simulated Range of Hip Joint Motion. *Arthroscopy, Sports Medicine, and Rehabilitation*. 2(6):e779-87, 2020.
14. Krähenbühl N, Lenz A, Lisonbee R, Peterson A, **Atkins PR**, Hintermann B, Saltzman C, Anderson AE, Barg A. Morphologic Analysis of the Subtalar Joint Using Statistical Shape Modeling. *Journal of Orthopaedic Research*. 38(12):2625-33, 2020.
15. Ohs N, Collins CJ, **Atkins PR**. Validation of HR-pQCT against Micro-CT for Morphometric and Biomechanical Analyses: A Review. *Bone Reports*. 13:100711, 2020.
16. Fiorentino NM, **Atkins PR**, Kutschke MJ, Foreman KB, Anderson AE. Soft Tissue Artifact Causes Underestimation of Hip Joint Kinematics and Kinetics in a Rigid-Body Musculoskeletal Model. *Journal of Biomechanics*. 108:109890, 2020.
17. Van Houcke J, Audenaert EA, **Atkins PR**, Anderson AE. A Combined Geometric Morphometric and Discrete Element Modeling Approach for Hip Cartilage Contact Mechanics. *Frontiers in Bioengineering and Biotechnology*. 8:318, 2020.

18. Uemura K, **Atkins PR**, Okamoto M, Kunihiro T, Anderson AE. Can Measurements from an Anteroposterior Radiograph Predict Pelvic Sagittal Inclination? *Journal of Orthopaedic Research*. 38(7):1477-85, 2020.
19. Uemura K, **Atkins PR**, Peters CL, Anderson AE. The Effect of Pelvic Tilt on Three-dimensional Coverage of the Femoral Head: A Computational Simulation Study using Patient-specific Anatomy. *Anatomical Record*. 304(2):258-65, 2019.
20. Murphy MM, **Atkins PR**, Kobayashi EF, Anderson AE, Maak TG, Nechyporenko AV, Aoki SK. Assessment of Acetabular Morphology Using the Anterior Center Edge-Angle on Modified False-Profile Radiographs. *Arthroscopy*. 35(11):3060-66, 2019.  
**Featured in:** Hartigan DE. *Editorial Commentary*: Modified False-Profile View-Two Birds With One Stone? *Arthroscopy*. 35(11):3067-68, 2019.
21. **Atkins PR**, Fiorentino NM, Hartle JA, Aoki SK, Peters CL, Foreman KB, Anderson AE. In-vivo Pelvic and Hip Joint Kinematics in Patients with Cam Femoroacetabular Impingement Syndrome: A Dual Fluoroscopy Study. *Journal of Orthopaedic Research*. 38(4):823-33, 2019.
22. Uemura K, **Atkins PR**, Anderson AE. The Effect of Using Different Coordinate Systems on In-vivo Hip Angles Can Be Estimated from Computed Tomography Images. *Journal of Biomechanics*. 95:109318, 2019.
23. Uemura K, **Atkins PR**, Anderson AE, Aoki AE. Do Your Routine Radiographs to Diagnose Cam Femoroacetabular Impingement Visualize the Region of the Femoral Head-neck Junction You Intended? *Arthroscopy*. 35(6):1796-806, 2019.
24. Killian M, Locke RC, James MG, **Atkins PR**, Anderson AE, Clohisy JC. Novel Model for the Induction of Postnatal Murine Hip Deformity. *Journal of Orthopaedic Research*. 37(1):151-60, 2019.  
 Recipient of the JOR Early Career Award.
25. **Atkins PR**, Shin Y, Agrawal P, Elhabian S, Whitaker RT, Weiss JA, Aoki SK, Peters CL, Anderson AE. Which Two-dimensional Radiographic Measurements of Cam Femoroacetabular Impingement Best Describe the Three-dimensional Shape of the Proximal Femur? *Clinical Orthopaedics and Related Research*. 477(1):242-53, 2019.  
**Featured in:** Rylander JH. *CORR Insights®*: Which Two-dimensional Radiographic Measurements of Cam Femoroacetabular Impingement Best Describe the Three-dimensional Shape of the Proximal Femur? *Clinical Orthopaedics and Related Research*. 477(1):254-256, 2019.
26. Uemura K, **Atkins PR**, Maas SA, Peters CL, Anderson AE. Three-dimensional Femoral Head Coverage in the Standing Position Represents That Measured In-vivo During Gait. *Clinical Anatomy*. 31(8):1177-83, 2018.
27. Uemura K, **Atkins PR**, Fiorentino NM, Anderson AE. Hip Rotation During Standing and Dynamic Activities and the Compensatory Effect of Femoral Anteversion: An In-vivo Analysis of Asymptomatic Young Adults using Three-dimensional Computed Tomography Models and Dual Fluoroscopy. *Gait and Posture*. 61:276-81, 2018.
28. **Atkins PR**, Kobayashi EF, Anderson AE, Aoki SK. Modified False-Profile Radiograph of the Hip Provides Better Visualization of the Anterosuperior Femoral Head-neck Junction. *Arthroscopy*. 34(4):1236-43, 2018.
29. **Atkins PR**, Fiorentino NM, Fauver SJ, Aoki SK, Peters CL, Maak TG, Anderson AE. In-vivo Measurements of Ischiofemoral Space in Recreationally Active Subjects during Dynamic Activities: A High-speed Dual-fluoroscopy Study. *American Journal of Sports Medicine*. 45(12):2901-10, 2017.
30. Fiorentino NM, **Atkins PR**, Kutschke MJ, Goebel JM, Foreman KB, Anderson AE. Soft Tissue Artifact Causes Significant Errors in the Calculation of Joint Angles and Range of Motion at the Hip. *Gait and Posture*. 55:184-90, 2017.
31. **Atkins PR**, Aoki SK, Elhabian SY, Agrawal P, Whitaker RT, Weiss JA, Peters CL, Anderson AE. Does Removal of Subchondral Cortical Bone Provide Sufficient Resection Depth for Treatment of Cam Femoroacetabular Impingement? *Clinical Orthopaedics and Related Research*. 475(8):1977-86, 2017.
32. **Atkins PR**, Elhabian S, Agrawal P, Harris MD, Whitaker RT, Weiss JA, Peters CL, Anderson AE. Quantitative Comparison of Cortical Bone Thickness using Correspondence-based Shape Modeling in Patients with Cam Femoroacetabular Impingement. *Journal of Orthopaedic Research*. 35(8):1743-53, 2017.

33. Fiorentino NM, **Atkins PR**, Kutschke MJ, Foreman KB, Anderson AE. In-vivo Quantification of Dynamic Hip Joint Center Errors and Soft Tissue Artifact. *Gait and Posture*. 50:246-51, 2016.
34. Fiorentino NM, Kutschke M, **Atkins PR**, Foreman KB, Kapron AL, Anderson AE. Accuracy of Functional and Predictive Methods to Calculate the Hip Joint Center in Young Non-pathologic Asymptomatic Adults with Dual Fluoroscopy as a Reference Standard. *Annals of Biomedical Engineering*, 44(7):2168-80, 2016.

### **Publications In Review**

1. Whittier DE, Walle M, Schenk D, **Atkins PR**, Collins CJ, Zysset P, Lippuner K, Müller R. A Multi-Stack Registration Technique to Improve Measurement Accuracy and Precision across Longitudinal HR-pQCT Scans. *Bone*. *In Review*.
2. Yilmaz D, Marques FC, Fischer Y, Zimmermann S, Hwang G, **Atkins PR**, Mathavan N, Singh A, de Souza PC, Kuhn GA, Wehrle E, Müller R. Unraveling the Mechanomolecular Mechanisms of TRAP Activity using CRISPR/Cas9 Mediated Fluorescent Reporter Mice. *iScience*. *In Review*. SSRN: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4476675](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4476675)

### **Conference Podium Presentations**

1. Whittier DE, Walle M, Ledoux C, **Atkins PR**, Collins CJ, Holtmann J, Zumstein MA, Christen P, Lippuner K, Müller R. Fracture Healing Leads to the Emergence of New Void Spaces in Bone Microarchitecture at the Distal Radius. *Meeting of the American Society for Bone Mineral Research*. Vancouver, Canada. 2023. *Submitted for Podium Presentation*.
2. Johnson L, Mozingo JD, **Atkins PR**, Schwab S, Wilson D, Kim H, Mulpuri K. A Three-Dimensional Statistical Shape Model to Describe Clinical Shape Variation of the Proximal Femur in Patients With Legg-Calvé-Perthes Disease Deformity. *COA/CORS/CORA Annual Meeting*. Calgary, Canada. 2023. *Submitted for Podium Presentation*.
3. Rojas T, Lädermann A, **Atkins PR**, Dommer L, Jacxsens M, Zumstein MA. Scapular Morphology Differentiates Glenohumeral Osteoarthritis But Not Rotator Cuff Pathology. *Swiss Orthopaedic Congress*. St. Gallen, Switzerland. 2023.
4. Collins CJ, **Atkins PR**, Ohs N, Blauth M, Lippuner K, Müller R. Clinical Observation of Diminished Bone Quality and Quantity through HR-pQCT-derived Mechanoregulation. *9<sup>th</sup> World Congress of Biomechanics*. Taipei, Taiwan. 2022.
5. Walle M, Eggemann D, **Atkins PR**, Stock K, Müller R, Collins CJ. Integration of Artificial Intelligence into Diagnostic Imaging: Convolutional Neural Network-supported HR-pQCT Visual Grading. *9<sup>th</sup> World Congress of Biomechanics*. Taipei, Taiwan. 2022.
6. Qin X, Gehre C, Qiu W, Sutter X, **Atkins PR**, Müller R. Microengineered 3D Bone Cell Models via Image-guided Two-photon Subtractive Lithography. *Tissue Engineering and Regenerative Medicine International Society European Chapter Conference*. Krakow, Poland. 2022.
7. Steiner PY, Walle M, Rigotti M, Whittier DE, McLennan C, **Atkins PR**, Müller R, Collins CJ. Correction of Motion Artefacts in HR-pQCT using Cycle-Consistent Adversarial Networks. *Congress of the European Biomechanics Society*. Porto, Portugal. 2022.
8. Whittier D, Walle M, Christen P, **Atkins PR**, Collins CJ, Blauth M, Lippuner K, Müller R. The Impact of Changes in Loading during Fracture Healing on Bone Microarchitecture of the Uninjured Wrist. *Congress of the European Biomechanics Society*. Porto, Portugal. 2022.
9. Walle M, Whittier D, Weidlich C, Windisch DO, **Atkins PR**, Christen P, Blauth M, Lippuner K, Müller R, Collins CJ. Time-lapsed HR-pQCT Allows Monitoring Local Bone Remodelling Events at Various Follow-up Time-points In Vivo. *23rd International Workshop on Quantitative Musculoskeletal Imaging*. Noordwijk, Netherlands. 2022.
10. **Atkins PR**, Elhabian SY, Weiss JA, Whitaker RT, Peters CL, Anderson AE. Combination of Statistical Shape Modeling and Statistical Parametric Mapping to Quantify Cartilage Contact Mechanics in Hip Dysplasia. *International Conference of Panamerican Society of Modeling Methods in Engineering and Applied Science*. Galapagos Islands, Ecuador. 2022.
11. **Atkins PR**, Agrawal P, Mozingo JD, Uemura K, Tokunaga K, Peters CL, Elhabian SY, Whitaker RT, Anderson AE. Use of Statistical Shape Modeling to Predict Clinical Metrics of Femoral Head Coverage in Patients with Developmental Dysplasia. *International Conference of Panamerican Society of Modeling Methods in Engineering and Applied Science*. Galapagos Islands, Ecuador. 2022.

12. Anderson AE, **Atkins PR**. ShapeWorks: An Integrated, Opensource Software for Shape Analysis in Engineering and Medicine. *International Conference of Panamerican Society of Modeling Methods in Engineering and Applied Science*. Galapagos Islands, Ecuador. 2022.
13. **Atkins PR**, Agrawal P, Mozingo JD, Uemura K, Tokunaga K, Peters CL, Elhabian SY, Whitaker RT, Anderson AE. Prediction of Clinical Measures of Femoral Head Coverage from Statistical Shape Modeling Parameters in Patients with Developmental Dysplasia. *Orthopaedic Research Society Annual Meeting*. Tampa, FL. 2022.
14. **Atkins PR**, Agrawal P, Mozingo JD, Uemura K, Anderson AE. Application of an Articulated Statistical Shape Model of the Hip to Predict Clinical Measures of Coverage. *Computer Methods in Biomechanics and Biomedical Engineering Symposium*. Virtual. 2021.
15. Elhabian SY, Lenz AL, **Atkins PR**. ShapeWorks: An Integrated Suite for Anatomy Representation and Analysis. *Computer Methods in Biomechanics and Biomedical Engineering Symposium*. Virtual Workshop. 2021.
16. Eggemann D, Walle M, **Atkins PR**, Stock K, Müller R, Collins CJ. Operator-independent Characterization of Image Quality in HR-pQCT Scans using a Fully Automated Convolutional Neural Network-based Classification Method. *Meeting of the American Society for Bone Mineral Research*. 2021.
17. Collins CJ, **Atkins PR**, Ohs N, Horling L, Stock K, Christen P, Blauth M, Müller R. Contralateral is not a Control: An In Vivo HR-pQCT Micro-FE Study of Hand Dominance in the Healing Distal Radius. *European Society of Biomechanics Conference*. Virtual. July 2021.
18. Lewis CL, Uemura K, **Atkins PR**, Lenz AL, Fiorentino NM, Aoki SK, Anderson AE. Bone-to-bone Distance Changes are Larger in Patients with Cam Femoroacetabular Impingement Syndrome. Atlanta, GA, USA. *Meeting of the American Society of Biomechanics*. Virtual. August 2020.
19. Schuring LL, **Atkins PR**, Fiorentino NM, Uemura K, Lenz AL, Mozingo JD, Anderson AE. Estimation of Labral and Cartilage Contact Mechanics during Gait in Hips with Cam Femoroacetabular Impingement Syndrome. *Summer Biomechanics, Bioengineering and Biotransport Conference*. Vail, CO, USA. Virtual. 2020.  
ASME-SB3C 2020 MS Student Paper Competition Finalist.
20. Collins CJ, **Atkins PR**, Ohs N, Horling L, Stock K, Christen P, Blauth M, Müller R. Elderly Patients With Distal Radius Fractures Exhibit Delayed Fracture Healing: An In Vivo HR-pQCT Micro-FEA Study. *Annual Meeting of the Orthopaedic Research Society*. Phoenix, AZ, USA. 2020.  
New Investigator Recognition Award (NIRA) Finalist.
21. Collins CJ, Ohs N, **Atkins PR**, Horling L, Blauth M, Müller R, Christen P. Delayed Fracture Healing Detected in Aged Distal Radius Fracture Patients using In Vivo HR-pQCT-based Micro-FE. *European Society of Biomechanics Conference*. Vienna, Austria. 2019.
22. **Atkins PR**, Simon K, Horling L, Ohs N, Christen P, Blauth M, Müller R. In Vivo Motion Artifacts Significantly Degrade Image Registration Accuracy. *European Society of Biomechanics Conference*. Vienna, Austria. 2019.
23. Uemura K, **Atkins PR**, Peters CL, Anderson AE. The Effect of Pelvic Tilt on Three-dimensional Coverage of the Femoral Head: A Computational Simulation Study using Patient-specific Anatomy. *International Society for Computer Assisted Orthopaedic Surgery*. New York, NY, USA. 2019.
24. Lenz AL, Krahenbuhl N, **Atkins PR**, Barg A, Hintermann B, Saltzman CL, Anderson AE. Morphologic Analysis of the Bones of the Ankle Joint Complex Using Statistical Shape Modeling. *Annual Meeting of the Orthopaedic Research Society*. Austin, TX, USA. 2019.  
New Investigator Recognition Award (NIRA) Finalist.
25. Uemura K, **Atkins PR**, Anderson AE, Aoki SK. Which Aspects of the Femoral Head-neck Junction are Visualized on Radiographic Views Used in the Diagnosis of Cam Femoroacetabular Impingement? *Proceedings, Annual Meeting of the International Society for Hip Arthroscopy*. Melbourne, VIC, Australia. 2018.
26. Hananouchi T, **Atkins PR**, Aoki SK, Anderson AE. Inclusion of the Acetabular Labrum Reduces the Range of Motion in Simulated Anterior Impingement Exam. *Proceedings, 9th International Society of Hip Arthroscopy Annual Scientific Meeting*. Santiago, Chile. 2018.
27. **Atkins PR**, Kobayashi EF, Aoki SK, Anderson AE. Visualization of the Femoral Head-neck Junction from the Modified False-Profile Radiograph of the Hip. *Proceedings, 9th International Society of Hip Arthroscopy Annual Scientific Meeting*. Santiago, Chile. Keynote Abstract. 2018.

28. Fiorentino NM, **Atkins PR**, Kutschke MJ, Aoki SK, Peters CL, Anderson AE. Femoroacetabular Impingement Patients Exhibit Altered Peak Joint Angles during the Gait Cycle. *Proceedings, XXVI Congress of the International Society of Biomechanics*. Brisbane, QLD, Australia. 2017.
29. **Atkins PR**, Fiorentino NM, Aoki SK, Peters CL, Maak TG, Anderson AE. High-speed Dual Fluoroscopy Measurement of Ischiofemoral Space in Recreationally Active Adults during Dynamic Activities. *Proceedings, XXVI Congress of the International Society of Biomechanics*. Brisbane, QLD, Australia. 2017.
30. Fiorentino NM, **Atkins PR**, Kutschke MJ, Goebel JM, Foreman BK, Anderson AE. Soft Tissue Artifact Causes Significant Errors in the Calculation of Joint Angles and Range of Motion at the Hip. *Proceedings, Annual Meeting of the Gait and Clinical Movement Analysis Society*. Salt Lake City, UT. 2017.
31. **Atkins PR**, Agrawal P, Elhabian SY, Whitaker RT, Weiss JA, Peters CL, Aoki SK, Anderson AE. Which Radiographic Measurements Best Identify Anatomical Variation in Femoral Head Anatomy? Analysis Using 3D Computed Tomography and Statistical Shape Modeling. *Proceedings, Annual Meeting of the International Society for Hip Arthroscopy*. San Francisco, CA. 2016.
32. **Atkins PR**, Fiorentino NM, Fauver SJ, Aoki SK, Peters CL, Maak TG, Anderson AE. In-Vivo Measurements of Ischiofemoral Distance in Recreationally Active Subjects During Dynamic Activities: A High-Speed Dual-Fluoroscopy Study. *Proceedings, Annual Meeting of the International Society for Hip Arthroscopy*. San Francisco, CA. 2016.
33. Fiorentino NM, **Atkins PR**, Kutschke MJ, Foreman KB, Anderson AE. Soft Tissue Artifact Causes Spurious Hip Joint Movement. *American Society of Biomechanics Annual Meeting*. Raleigh, NC. 2016.
34. Fiorentino NM, **Atkins PR**, Kutschke MJ, Foreman KB, Kapron AL, Anderson AE. Is the Hip a Ball-and-Socket Joint? Dynamic Dual Fluoroscopy Tests the Validity of an Age-old Paradigm. *Proceedings, Annual Orthopaedic Research Society Meeting*. Orlando, FL. 2016.  
New Investigator Recognition Award (NIRA) Finalist.
35. **Atkins PR**, Mukherjee P, Elhabian SY, Singla S, Whitaker RT, Weiss JA, Anderson AE. Warping of Template Meshes for Efficient Subject-Specific FE Mesh Generation. *Proceedings of the 13<sup>th</sup> International Symposium of Computer Methods in Biomechanics and Biomedical Engineering*. Montreal, Canada. 2015.
36. **Atkins PR**, Fiorentino NM, Kutschke MJ, Fauver SJ, Kapron AL, Peters CL, Aoki SK, Anderson AE. In-Vivo Kinematics of the Asymptomatic Hip during Dynamic Pivoting: Foundations for the Evaluation of Femoroacetabular Impingement. *Proceedings, Summer Biomechanics, Bioengineering, and Biotransport Conference*. Snowbird, UT. 2015.
37. **Atkins PR**, Mukherjee P, Elhabian SY, Singla S, Harris MD, Weiss JA, Whitaker RT, Anderson AE. Proximal Femoral Cortical Bone Thickness in Patients with Femoroacetabular Impingement and Normal Hips Analyzed using Statistical Shape Modeling. *Proceedings, Summer Biomechanics, Bioengineering, and Biotransport Conference*. Snowbird, UT. 2015.
38. **Atkins PR**, Mukherjee P, Elhabian S, Singla S, Harris MD, Weiss JA, Whitaker RT, Anderson AE. Comparison of Proximal Femoral Cortical Bone Thickness between Patients with Femoroacetabular Impingement and Normal Hips Analyzed by Statistical Shape Modeling. *Proceedings, Annual Orthopaedic Research Society Meeting*. Las Vegas, NV. 2015.
39. **Atkins P**, Whitaker RT, Weiss JA, Anderson AE. Statistical Shape Modeling of Cortical Bone Thickness in Patients with Femoroacetabular Impingement. *Proceedings of the Annual Meeting of the Biomedical Engineering Society*. San Antonio, TX. 2014.
40. **Atkins P** and Stanley L. Design and Evaluation of a Collision Avoidance System for Cyclists. *Proceedings of The IMAGE Society Annual Conference*. Saint Louis, MO. 2009.

#### **Conference Poster Presentations**

1. **Atkins PR**, Hotaling JM, Parashar M, Phillips JM, Quinlan AR, Sheng ORL. Initiatives to Expand Data Science and Data-enabled Science Education, Collaboration, and Research. *Interagency Modeling and Analysis Group Multiscale Modeling Consortium Meeting*. Bethesda, MD. 2023.
2. **Atkins PR**, Morris A, Elhabian SY, Anderson AE. Correspondence-based Statistical Analysis of Subject-specific Hip Biomechanics. *International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*. Paris, France. 2023.

3. Whittier D, Walle M, Ledoux C, **Atkins PR**, Holtmann J, Collins CJ, Christen P, Lippuner K, Müller R. Early Bone Remodelling Measured by HR-pQCT and Bone Turnover Markers during Fracture Healing are Determinants of Long-term Bone Mineral Density. *European Calcified Tissue Society Congress*. Liverpool, England. 2023.
4. **Atkins PR**, Morris A, Elhabian SY, Anderson AE. Application of Correspondence-based Networks to the Analysis of Spatial and Temporal Biomechanics Data. *Orthopaedic Research Society Annual Meeting*. Dallas, TX. 2023.
5. **Atkins PR**, Weiss JA, Peters CL, Anderson AE. Leveraging Correspondence-based Shape Modeling for Statistical Parametric Mapping of Biomechanics. *ORS Ambassador Regional Symposium in Conjunction with SOARS Conference*. Sundance, UT. 2022.  
Best Presentation Award.
6. Kussow SJ, **Atkins PR**, Anderson AE. Towards Biomechanical Insights to Quantify the Pathophysiology of Femoroacetabular Impingement Syndrome. *ORS Ambassador Regional Symposium in Conjunction with SOARS Conference*. Sundance, UT. 2022.
7. Rojas T, Dommer L, Jaxsens M, **Atkins PR**, Zumstein MA, Lädermann A. Scapular Morphology Differentiates Glenohumeral Osteoarthritis but not Rotator Cuff Pathology. *30<sup>th</sup> European Society for Surgery of the Shoulder and Elbow Congress*. Dublin, Ireland.
8. Walle M, Eggemann D, **Atkins PR**, Stock K, Müller R, Collins CJ. Operator-independent Characterisation of Image Quality in HR-pQCT Scans using a Fully Automated Convolutional Neural Network-based Classification Method. *Orthopaedic Research Society*. Tampa FL. 2022.
9. **Atkins PR**, Elhabian SY, Weiss JA, Whitaker RT, Peters CL, Anderson AE. Quantification of Cartilage Mechanics through Statistical Shape Modeling and Statistical Parametric Mapping. *Orthopaedic Research Society*. Tampa, FL. 2022.
10. Mozingo JD, **Atkins PR**, Maak TG, Aoki SK, Anderson AE. Towards Identification Of Anatomic Phenotypes In Individuals At Risk For Femoroacetabular Impingement Syndrome. *Orthopaedic Research Society*. Tampa, FL. 2022.
11. Mozingo JD, **Atkins PR**, Maak TG, Aoki SJ, Anderson AE. Characterizing the Spectrum of Hip Morphology via Statistical Shape Modeling and Linear Discriminant Analysis. *Computer Methods in Biomechanics and Biomedical Engineering*. Virtual. 2021.
12. Mozingo JD, **Atkins PR**, Agrawal P, Uemura K, Elhabian SY, Whitaker RT, Anderson AE. Morphology of Hip Dysplasia in Japanese Females: A Statistical Shape Modeling Study. *American Society of Biomechanics*. Virtual. 2021.
13. **Atkins PR**, Simon K, Collins CJ, Ohs N, Horling L, Christen P, Blauth M, Müller R. Local Bone Remodeling in Distal Radius Fracture Healing Is Not Isolated to the Fracture Region: A Time-lapse HR-pQCT Imaging Study. Seattle, WA, USA. *American Society of Bone and Mineral Research*. Virtual. 2020.
14. Collins CJ, **Atkins PR**, Ohs N, Horling L, Stock K, Christen P, Blauth M, Müller R. Bilateral Asymmetry in the Healing Distal Radius: An in vivo HR-PQCT Micro-Finite Element Analysis Study. Seattle, WA, USA. *American Society of Bone and Mineral Research*. Virtual. 2020.
15. **Atkins PR**, Stock K, Horling L, Ohs N, Collins CJ, Christen P, Blauth M, Müller R. Bone Resorption and Formation Rates are Reduced in Late Stage Healing of Dominant Arm Distal Radius Fractures. *Annual Meeting of the Orthopaedic Research Society*. Feb 2020.
16. Ohs N, Tourelle né Betts D, Schroeder B, **Atkins PR**, Collins CJ, Christen P, Müller R. Contouring Radius Fractures using Active Contours. *Swiss Society for Biomedical Engineering*. Poster. Aug 2019.
17. Uemura K, **Atkins PR**, Anderson AE, Aoki SK. Application of Computer Modeling to Decipher which Region of the Femoral Head-neck Junction is Visualized on Radiographic Views Commonly Used in the Diagnosis of Cam Femoroacetabular Impingement. *Annual Meeting of the Orthopaedic Research Society*. Austin, TX, USA. 2019.
18. **Atkins PR**, Fiorentino NM, Hartle JA, Aoki SK, Peters CL, Foreman KB, Anderson AE, Aoki SK. Kinematic Compensations in Patients with Cam Femoroacetabular Impingement Syndrome: A Dual Fluoroscopy Study? *Proceedings, Annual Meeting of the International Society for Hip Arthroscopy*. Melbourne, VIC, Australia. E-poster Presentation. 2018.
19. **Atkins PR**, Fiorentino NM, Colby SA, Anderson AE. Sensitivity of Cartilage Contact Mechanics Predictions to Subject Specific Loading Conditions. *Proceedings, Annual Summer Biomechanics, Bioengineering, and Biotransport Conference*. Tucson, AZ. 2017.



20. Hananouchi T, **Atkins PR**, Aoki SK, Anderson AE. Significant Effect of Hip Labrum on Computational Kinematic Simulation during Hip Motion. *Proceedings, International Society for Computer Assisted Orthopaedic Surgery*. Aachen, Germany. Special Poster Teaser. 2017.
21. Fiorentino NM, **Atkins PR**, Kutschke MJ, Foreman BK, Anderson AE. Soft Tissue Artifact Leads to Errors in Biomechanical Model Outputs at the Hip Joint. *Proceedings, Annual Meeting of the Gait and Clinical Movement Analysis Society*. Salt Lake City, UT. 2017.
22. **Atkins PR**, Fiorentino NM, Colby SA, Anderson AE. Importance of Subject Specific Kinematics and Kinetics for Predicting Cartilage Contact Mechanics. *Proceedings, Annual Meeting of the Gait and Clinical Movement Analysis Society*. Salt Lake City, UT. 2017.
23. Hananouchi T, **Atkins PR**, Aoki SK, Anderson AE. Effect of Hip Labrum on Kinematic Simulation during Hip Motion. *Proceedings, The Annual Meeting of the Japanese Orthopaedic Association*. Sendai, Japan. Poster. 2017.
24. Hananouchi T, **Atkins PR**, Aoki SK, Anderson AE. Effect of Hip Labrum on Computational Kinematic Simulation during Hip Motion. *Proceedings, Annual Meeting of the Orthopaedic Research Society*. San Diego, CA. Poster Teaser. 2017.
25. **Atkins PR**, Fiorentino NM, Fauver S, Aoki S, Peters C, Maak T, Anderson AE. Dynamic In-Vivo Measurement of Ischiofemoral Space in Recreationally Active Subjects during Activities of Daily Living: A High-Speed Dual-Fluoroscopy Study. *Proceedings, Annual Meeting of the Orthopaedic Research Society*. San Diego, CA. 2017.
26. **Atkins PR**, Aoki SK, Elhabian SY, Agrawal P, Whitaker RT, Weiss JA, Peters CL, Anderson AE. Evaluation of the Sclerotic Subchondral Bone Boundary as a Surgical Resection Guide in the Treatment of Cam-type Femoroacetabular Impingement. *Proceedings, Annual Meeting of the Orthopaedic Research Society*. San Diego, CA. Poster Teaser. 2017.
27. Fiorentino NM, **Atkins PR**, Kutschke MJ, Kapron AL, Foreman KB, Anderson AE. The Hip Joint Estimates from Skin-Marker-Based Methods Do Not Correspond with Measurements using Dual Fluoroscopy. *Proceedings, Summer Biomechanics, Bioengineering, and Biotransport Conference*. Snowbird, UT. 2015.
28. Fiorentino NM, Kutschke M, **Atkins PR**, Goebel JM, Kapron AL, Foreman K. Bo. Anderson AE. Joint Angle and Minimum Bone-to-Bone Distance Changes in the Hip Joint during Inclined Walking. *Proceedings, Annual Orthopaedic Research Society Meeting*. Las Vegas, NV. 2015.

### **Invited Talks and Presentations**

University of Kentucky, Lexington, KY, USA	March 2022
<i>Investigating the Relationship Between Structure and Function in Human Biomechanics</i>	
Northern Arizona University, Flagstaff, AZ, USA	Feb 2020
<i>The Role of Structure and Function in Human Biomechanics: A Multi-Scale Investigation</i>	
Kantonsspital, St. Gallen, Switzerland	Aug 2019
<i>Biomechanics of Cam Femoroacetabular Impingement</i>	
University of Minnesota, Minneapolis, MN, USA	Apr 2018
<i>Defining Subject-specific Biomechanics and Population-based Morphological Measurements of Cam Femoroacetabular Impingement</i>	
Washington University, St. Louis, Missouri, USA	Apr 2018
<i>Characterization of Cam Femoroacetabular Impingement using Subject-specific Biomechanics and Population-based Morphological Measurements</i>	

### **HONORS AND AWARDS**

Best Presentation Award, SOARS Research Symposium (\$200, ORS registration)	2022
Selected for Orthopaedic Research Society Future Faculty Poster Session	2022
Fix the Leaky Pipeline Peer Mentoring Program Grant (CHF 5,000)	2019 - 2020
<i>TogETHER to Become the Next Leaders – Where do I get from here? How do I get there? and What can I do now?</i>	

OpenSim Advanced User Workshop Team Travel Award (\$2,000) Mar 2015  
*Toward Incorporation of Patient Specific Arthrokinematics in OpenSim Musculoskeletal Models of the Lower Limb*

Richard K. & Maria A. Obyn Memorial Endowment Research Scholarship (\$3,500 yearly) 2014 – 2018

Force and Motion Foundation Academic Scholarship (\$10,000) 2013 – 2014  
*Biomechanics of Femoroacetabular Impingement*

### FUNDING AND RESEARCH EXPEDITIONS

Research Project (Role: Research Associate) Jul 2020 - June 2025  
 National Institutes of Health (R01-AR077636) \$2,726,819  
*Morphological and Biomechanical Insights into the Pathophysiology of Femoroacetabular Impingement Syndrome*

Research Project (Role: Research Associate) Aug 2020 - Apr 2024  
 National Institutes of Health (R01-EB016701-05 A1) \$2,468,317  
*Computational and Statistical Framework to Model Tissue Shape and Mechanics*

ETH Zurich Postdoctoral Fellowship (Role: PI) May 2019 - April 2021  
 ETH Domain, co-funded by EU Commission FP7 (608881) CHF 210,000  
*Defining the Role of Shape-based Trabecular Morphometrics in Localized Fracture Healing*

Research Project (Role: Research Associate) July 2017 - Sept 2020  
 Swiss National Science Foundation (DACH Consortium Grant 320030L\_170205) CHF 412,911  
*Mechanoregulation of Bone Fracture Healing in Healthy, Aged, and Osteoporotic Humans*

Research Project (Role: Methodology and Writing, Research Associate) May 2018 - May 2020  
 PAC-12 Student Athlete Health and Well-Being Initiative \$844,138  
*Injury and Prevention: Developing a Comprehensive, Quantitative Understanding of Hip Morphometrics and Biomechanics in Collegiate Athletes at Risk for Developing Femoroacetabular Impingement Syndrome*

Research Project Grant (Role: PI) May 2017 - July 2019  
 LS-Peery Foundation \$5,000  
*The Effect of Subject-Specific Hip Motion on Joint Loading in Patients with Femoroacetabular Impingement*

Research Project Grant (Role: PI) Mar 2014 - July 2017  
 LS-Peery Foundation \$5,000  
*Muscle Forces and Hip Joint Motions in Patients with Femoroacetabular Impingement*

Graduate Research Project (Role: Research Associate) Aug 2013 - July 2018  
 National Institutes of Health (R01-EB016701 A1) \$1,699,034  
*Population-based Shape and Biomechanical Analysis of Hip Pathoanatomy*

Graduate Research Project (Role: Research Associate) May 2013 - April 2016  
 National Institutes of Health (R21-AR063844) \$348,501  
*Musculoskeletal and Finite Element Modeling of Femoroacetabular Impingement*

### INSTITUTIONAL ROLES AND OUTREACH

NIH Data Sharing Committee, University of Utah 2023 -  
 Committee Member, Women's Leadership Forum, Orthopaedic Research Society 2022  
 Panelist, Graduate Women in Bioengineering, University of Utah 2022  
 Group Lead, Little Bellas, Park City, UT 2022 -  
 Member, BME Strategic Planning Clinical Relationships Subcommittee, University of Utah 2021 - 2022  
 Mentor, Little Bellas, Park City, UT 2021  
 Panelist, Graduate Society of Women Engineers, University of Utah 2021, 2022

Evaluator, Undergraduate Research Symposium, University of Utah	2021
Peer Mentoring Group Lead, Fix the Leaky Pipeline, ETH Zurich	2019 - 2020
Workshop Instructor, Expand Your Horizons, Salt Lake Community College	2018
Activities Co-Chair, Graduate Women in Bioengineering, University of Utah	2017- 2018
Assistant Coach, South Davis Composite Mountain Bike Team, Bountiful, UT	2017
Science Fair Judge, The University of Utah Science & Engineering Fair	2017, 2018, 2022
Workshop Instructor, Elementary Engineering Week, University of Utah	2016 - 2018
Faculty Applicant Interviews, University of Utah	2016
Guest Lecturer, Vanguard Academy, Engineering Design Lecture	2015
Reviewer, Intermountain Junior Science and Humanities Symposium	2014
Matched Mentor, Big Brothers Big Sisters of Southwest Idaho, Idaho Falls, ID	2012 - 2013
Math Tutor, Cloverdale Elementary, Grades 4-6, Idaho Falls, ID	2010 - 2013
Troop Co-Leader, Girl Scouts of Montana and Wyoming, Grades 2-4, Bozeman, MT	2008 - 2009

**ACADEMIC MENTORSHIP****Orthopaedic Residents and Surgeons**

Lukas Horling, MD	2018-2019
<i>Localized Mechanics of Scaphoid Fractures: A HR-pQCT and microFE Study</i>	
Kerstin Simon, MD	2018
Keisuke Uemura, MD, PhD	2017-2018
<i>Shape and Function of the Hip Joint in Femoroacetabular Impingement and Dysplasia Patients</i>	
Takehito Hananouchi, MD, PhD	2016

**Internships**

YoungJae Shin, BS	Research Associate, University of Utah	2021
Aditya Khanna	IIT Bombay Summer Internship	2020
	<i>Application of Machine Learning to the Quantification of Trabecular Bone Microstructure</i>	
Arthur VanKootwijk, BS	TU Delft, Swiss-European Mobility Programme	2019
	<i>In-Vivo Quantification of Bone Remodeling in Fracture Healing</i>	

**Graduate Students**

Jack Kendall, Health Sci & Tech	Master Semester Project, ETH Zurich	2019
	<i>Isolation and Tracking of Fracture Fragments over Time using Registration of Time-Lapse Distal Radius Scans</i>	

**Bachelor Students**

Megan Genetti, Comp Sci	Undergraduate Research Assistant, University of Utah	2021 - 2023
Bergen Braun, Biomed Eng	Undergraduate Research Project, University of Utah	2021 - 2023
	<i>Statistical Shape Modeling of Sex-Based Pelvic Morphology</i>	
Josh Dean, Biomed Eng	Undergraduate Research Assistant, University of Utah	2021 - 2022
Jack Kendall, Mech Eng	Bachelor Semester Project, ETH Zurich	2019
	<i>Identification and Registration of Fracture Fragments of Time-Lapse Distal Radius Scans</i>	
Lindsay Schuring, Biomed Eng	Bachelors Thesis Project, University of Utah	2017 - 2018
	<i>Evaluation of Femur-Labrum Contact during Activities of Daily Living in Healthy Control Subjects and Patients with Cam Femoroacetabular Impingement</i>	
Joe Hartle, Biomed Eng	Undergraduate Research Project, University of Utah	2016 - 2018
	<i>Kinematics of Hip Joints with Cam Femoroacetabular Impingement</i>	

YoungJae Shin, Biomed Eng	Undergraduate Research Project, University of Utah	2016 - 2018
<i>Evaluation of Standard Clinical Measurements for the Proximal Femur against Shape Variation Determined using Statistical Shape Modeling</i>		
Samuel Colby, Biomed Eng	Bachelors Thesis Project, University of Utah	2016 - 2017
<i>Finite Element Analysis of Cartilage Stresses Across a Variety of Activities of Daily Living Using Kinematics from Dual Fluoroscopy</i>		
Sara Fauver, Biology	Bachelors Thesis Project, University of Utah	2015 - 2016
<i>In-vivo Hip Joint Kinematics during Internal and External Rotating Pivots</i>		
Iasia Beh, Biomed Eng	Undergraduate Research Project, University of Utah	2015
<i>Femoroacetabular Impingement: Evaluation of Femur-Labrum Contact during Activities of Daily Living</i>		
Tyler Skinner, Biomed Eng	Undergraduate Research Project, University of Utah	2014 - 2015
<i>Analysis of In-vivo Hip Kinematics in Patients with Femoroacetabular Impingement with Dual Fluoroscopy and Motion Capture</i>		
Elliot Hurd, Biomed Eng	Undergraduate Research Project, University of Utah	2014 - 2016
<i>Evaluation of Anatomical Shape Variation in Patients with Hip Dysplasia and Femoroacetabular Impingement</i>		
Trevor Hafer, Biomed Eng	Undergraduate Research Project, University of Utah	2014 - 2017
<i>Cortical Bone Thickness in Patients with Femoroacetabular Impingement</i>		

## PROFESSIONAL SOCIETIES

Orthopaedic Research Society	2015 - 2023
American Society of Bone and Mineral Research	2020
European Society of Biomechanics	2019 - 2020
International Society of Biomechanics	2017
Gait and Clinical Movement Analysis Society	2017
Biomedical Engineering Society	2014

## JOURNAL AND ABSTRACT REVIEWS

### Abstracts

Orthopaedic Research Society Abstracts	2022
Late Breaking Orthopaedic Research Society Abstracts	2021, 2022

### Journals

Medicine & Science in Sports & Exercise	2022
Journal of Biomechanical Engineering	2022
Scientific Reports	2021 - 2022
Journal of Orthopaedic Research	2021 - 2022
ASME Open Journal of Engineering	2021
BMC Musculoskeletal Disorders	2021 - 2022
The Journal of Cartilage & Joint Preservation	2021
European Journal of Radiology	2020 - 2021
Bone	2019 - 2022
Bone Reports Guest Editor: Special Issue on Computational Methods	2019 - 2020
Osteoporosis International	2019
Computer Methods and Programs in Biomedicine	2018 - 2022

## SKILLS

Software: MATLAB, R, Python, ShapeWorks, FEBio Software Suite, ImageJ, Amira, Materialise Mimics and 3-Matic, TrueGrid, ANSA, Vicon Nexus, OpenSim, C-Motion Visual 3D and DSX, Scanco Image Processing Language, Adobe Illustrator

Certifications: CITI Program, Good Clinical Practices, Radiation Worker, MRI Safety, Research Mentoring, Lean Six Sigma Green Belt, Scrum Master

Language: English (Native), German (B1)

**MEDIA HIGHLIGHTS**

The Daily Utah Chronicle <i>Biking to Give Back</i>	Jan 2018
Western Transportation Institute's News <i>WTI Undergraduate Research Experience Student to present at Image 2009 Conference &amp; Exhibition</i>	July 2009
University Communications, Montana State University <i>Students use new traffic simulator to help prevent car-bike crashes</i>	Feb 2009