THOR ERIK ANDREASSEN

Phone: 303-905-7962
Email: Andreassen.Thor@mayo.edu

101 Avalon Cove Cir NW
Rochester, MN 55901

Doctor of mechanical engineering focusing on developing digital twins of the musculoskeletal system from *in vivo* measurements. Additionally, an experienced mentor and instructor teaching students and industry professionals at all levels on a range of topics. Formerly an R&D consultant and engineer for vibration condition monitoring of large-scale machinery. Long-term goals are to continue research in patient-specific measurement, modeling, and simulation to address pathology and disability and make meaningful contributions to improve human health.

EDUCATION

PhD University of Denver, Mechanical Engineering — *09/2020 –11/2023*
Dissertation*:* "*Digital Twins of the Living Knee: From Measurements to Model*"

MS University of Denver, Mechanical Engineering — *09/2018 – 06/2020*
Thesis*:* "*In Vivo Data Capture using HSSR for Calibration of Computational Models*"

BS Colorado School of Mines, Mechanical Engineering — *08/2012 – 05/2016*
Graduated Magna Cum Laude

RESEARCH EXPERIENCE

Postdoctoral Research Fellow, Mayo Clinic — *01/2024 – Present*
Mentor*: Kristin D. Zhao, PhD*

- NIH-funded T32 Training grant (NIH T32 AR056950) to develop patient-specific computational models of the wrist for investigation of wrist joint injuries
- Leading the development of artificial intelligence (AI) tools from internal award (Project # 94067028) to improve the classification of scapholunate ligament injuries of the wrist using a combination of morphing, conformal mapping, and data from four-dimensional computed tomography (4DCT)
- Applied morphing techniques to generate over 800 uniform meshes of the bones of the wrist and hand of healthy and distal radial ulnar joint injured individuals towards the development of a statistical shape model
- Developing FEA models of transcutaneous and epidural electrical stimulation in subject-specific models of the spinal cord to investigate the effects of spine position on the electrical discharge of the stimulation through the spinal cord in patients with spinal cord injury(SCI)

PhD Candidate, University of Denver *06/2021 – 12/2023*
Advisor*: Kevin B. Shelburne, PhD*

- Generated subject-specific FEA models using a previously published custom knee laxity apparatus for living subjects and cadaveric specimens (NIH U01 AR072989)
- Collaborated with several research groups around the world (NIH R01 EB024573) to determine the effects of individual decisions within the modeling process on the final predictions of joint kinematics and dynamics (https://simtk.org/projects/kneehub)
- Assisted another researcher in developing FEA models for the prediction of subject-specific joint contact patterns for healthy and implanted shoulders using a design of experiments (DOE) analysis
- Led a project to openly distribute 260 FEA-ready lower-limb musculoskeletal geometries and segmentation maps of the Visible Human Female and Male (https://simtk.org/projects/3d-vh-geometry)
- Developed a publicly available algorithm using generalized regression neural networks (GRNNs) to morph geometries and remove mesh overclosures automatically prior to FEA (https://simtk.org/projects/femors-rbf)
- Contributed to a team of engineers at the University of Denver in collaboration with radiologists at the Steadman Hawkins Clinic of the UC Health Hospital to develop scan protocols from MRI for improved muscle, bone, and cartilage modeling *in vivo*

Graduate Research Assistant, University of Denver *03/2019 – 06/2021*
Advisor: *Kevin B. Shelburne, PhD*

- Designed and built a published knee laxity apparatus for accurate measurement of knee laxity *in vivo* on subjects using high-speed stereo radiography (HSSR) and fluoroscopic tracking techniques (https://doi.org/10.1115/1.4051834)
- Executed a study involving *in vitro* testing of two specimens to create publicly available healthy and ACL resected knee datasets complete with kinematics, dynamics, geometry, and calibrated FE models as part of an NIH-funded project
- Captured *in vivo* patient-specific geometry, kinematics, dynamics, electromyography (EMG), isometrics, and knee laxity of six individuals to create a publicly available dataset of healthy human knee joints as part of an NIH-funded project
- Measured strain and displacement of nine cadavers implanted with different types of periprosthetic femoral fracture plates and total hip replacements under various validated *in vivo* loads using digital image correlation and a uniaxial load frame
- Supported other researchers on several bi-planar radiography studies to measure differences between healthy, osteoarthritis (OA) affected, and joint replacement for knee, hip, and shoulder joints
- Managed a group of undergraduate student workers to process data of knee, hip, and shoulder kinematics from fluoroscopy

WORK EXPERIENCE

Engineering Consultant, Update International Inc. *09/2018 – 05/2023*

- Consulted with industrial clients on condition monitoring of large-scale machinery in the paper, water and power, textile, and mining industries to determine faults affecting manufacturing processes and determine underlying causes and solutions

- Directed and oversaw ongoing architecture development for the DT6, a proprietary vibration analysis software and hardware tool with fault prediction capabilities

Research and Development Engineer, Update International Inc. *10/2016 – 09/2018*

- Programmed LabView for the implementation of fault detection algorithms and GUI for a portable vibration analyzer and fault prediction tool
- Engineered and built a calibration system for frequency-based amplitude correction of 6-channel MEMS-based accelerometer sensors
- Created the software for an automated phase-based balancing system for dynamic rotor balancing using laser tachometers
- Developed a novel method for fault detection of machinery using time-synchronized audio and vibration measurements

Biomedical Engineer I, 3D Systems *10/2016 – 01/2017*

- Designed patient-specific orthognathic surgical device splints for accurate surgical cuts during severe maxillofacial reconstruction surgery according to FDA, EU-MDD, CMDR, and ISO-approved regulations and standards
- Generated pre-op and post-op measurements and reports for the surgeon and surgical-planner validation

Engineering Intern, Update International Inc. *05/2015 – 10/2016*

- Developed an artificial waveform simulator software allowing for user implementation of synthetic vibration data
- Created automated gravity compensation algorithm for accelerometer sensors

TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Denver *09/2022 – 12/2022*
Department of Mechanical and Materials Engineering *09/2018 – 06/2019*

- Developed homework solutions, graded, and assisted MS and PhD students in a graduate engineering reliability class
- Taught the lecture for second-year students in an introduction to MATLAB Programming and Numerical Methods class of approximately 90 students; responsible for recitations, developing homework assignments, and grading
- Advised approximately 60 final-year students in Senior Design Capstone by guiding teams, facilitating team brainstorming, grading, and handling all finances
- Instructed first-year students in a lab course on CAD and Basic Mechanical Systems for approximately 20 students, focusing on managing lab work, grading reports, and teaching SolidWorks skills

Condition Monitoring Instructor, Update International Inc. *07/2017 – 12/2017*

- Coordinated and instructed courses for technicians to learn vibration analysis fundamentals and software tools using portable vibration analysis systems
- Created coursework, practice exams, and simulation software for students to prepare for the American Society of Non-Destructive Testing (ASNT) Vibration Level I certification exam.

- Wrote several chapters on vibration analysis for a textbook used to teach technicians and engineers vibration analysis and condition monitoring

FUNDING

Early Research Investigator Career Award (Project # 94067028) *2024*
PI: *Dr. Thor E. Andreassen*
Amount: *$25,000*
Project Title: *Machine Learning of 3D Vector Field Images for Classification of Scapholunate Ligament Injuries*

Received an award for the most compelling research project for early researchers by the Mayo Clinic Office of Core Shared Services. Award included grant funding to direct a team of engineers to use machine learning to classify different types of scapholunate ligament injuries based on a dataset of synthetically generated mapped RGB vector field images with descriptive tabular data created from computational modeling.

NIH NIAMS T32 Training Grant (T32 AR056950) *2024 - Present*
PI: *Dr. Jennifer Westendorf*
Project Title: *Combining FEA and Machine Learning with 4DCT of the Wrist*

Actively receiving training support from the Musculoskeletal Research training grant at Mayo Clinic. Current work focuses on developing participant-specific finite element models of individuals from four-dimensional computed tomography (4DCT) imaging.

HONORS AND AWARDS

Graduate Research Scholar of the Year *2023*
Voted the best graduate researcher of the year by the professors, students, and staff for the Daniel Felix Ritchie School of Engineering and Computer Science at the University of Denver

Graduate Teaching Assistant of the Year *2019*
Voted the best graduate teaching assistant of the year by the professors, students, and staff for the Daniel Felix Ritchie School of Engineering and Computer Science at the University of Denver

Senior Design Capstone Project Finalist *2016*
Won 2nd place for senior capstone engineering team out of approximately 65 teams and 400 students by the alumni, faculty, and invited members of the community at the Colorado School of Mines for engineering a tocodynamometer to measure human muscle contractions more accurately during labor

ASME Old Guard Finalist *2016*
Won 3rd place for an oral presentation on 3D printing technology out of approximately 70 participating universities and 150 presenters at the Old Guard Oral Presentation Competition at the National ASME Student Conference at the Georgia Institute of Technology

PROFESSIONAL TRAINING

Good Clinical Practice, Mayo Clinic	03/2025
Human Subjects Protection, Mayo Clinic	03/2025
Responsible Conduct of Research Training, Mayo Clinic,	03/2024
Clinical Trials Safety, CITI Program	*05/2019*
Biomedical Student Investigator, CITI Program	*08/2023*
Biomedical Student Investigator, CITI Program	*05/2019*
Category II Vibration Analyst, American Society of Non-Destructive Testing	*09/2017*
Category I Vibration Analyst, American Society of Non-Destructive Testing	*02/2017*

PROFESSIONAL AFFILIATIONS

Member of The American Society of Mechanical Engineers	*2015 – Present*
Member of The Institute of Electrical and Electronics Engineers	*2017 – Present*
Member of The Orthopaedic Research Society	*2020 – Present*
Member of The International Society of Biomechanics	*2022 – Present*
Member of The American Society of Biomechanics	*2025 – Present*
Member of The Hand and Wrist Biomechanics International	*2025 – Present*

JOURNAL REFEREE POSITIONS

Reviewer for The Journal of Medical Devices	*2024 – Present*
Reviewer for Journal of Biomechanical Engineering	*2024 – Present*
Reviewer for Frontiers in Bioengineering and Biotechnology	*2024 – Present*
Reviewer for Open Journal of Engineering	*2024 – Present*
Reviewer for Scientific Reports	*2025 – Present*
Reviewer for Orthopaedic & Traumatology: Surgery & Research	*2025 – Present*

LANGUAGES

English: Native Language
Swedish: Superior Listener, Advanced Speaker, Intermediate Reader and Writer

COMMUNITY INVOLVEMENT

Biomechanics Demonstrations for STEM and Kinesiology Outreach	*2019 – Present*
Volunteer Engineering Tutor	*2021 – 2023*
Stem Education Board Mountain Vista High School	*2013 – 2018*
Biomedical Technician Volunteer	*2008 – 2012*
Orthopaedic Assistant	*2011 – 2011*

GENERAL SKILLS

Musculoskeletal: Finite element Analysis (FEA), Finite element Modeling (FEM), Subject Testing, Medical Imaging, EMG, Force Plates, Fluoroscopy, Isometrics, Motion Capture, Inertial Measurement Units (IMU), Musculoskeletal Segmentation, Cadaveric Dissection, Uniaxial Testing, DIC

Fabrication and Design: Computer-Aided Design (CAD), Device Design, Machining, CNC, GD&T, Soldering, Circuit-Board Design

Programming: MATLAB, Python, LabView, R, Java, git

Machine Learning and Artificial Intelligence: Regression, Keypoint Detection, Classification, TensorFlow, PyTorch, Keras, scikit-learn

Software: Abaqus, SolidWorks, HyperMesh, OpenSim, DSX, Autoscoper, ScanIP, 3D Slicer, Vicon Nexus, FE Bio, Phantom Camera Control, Autodesk, MeshLab, MeshMixer

Scientific Writing: NIH Grants, Foundation Grants, Scientific Publications, Textbook Chapters on Engineering,

PUBLICATIONS

Publications

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Higinbotham, S.E., Shelburne, K.B., "Automated 2D and 3D Finite Element Overclosure Adjustment and Mesh Morphing Using Generalized Regression Neural Networks", Medical Engineering and Physics vol 126, April 2024, pp1-13: https://doi.org/10.1016/j.medengphy.2024.104136

Andreassen, T.E., "Digital Twins of the Living Knee: From Measurements to Model", ProQuest ETD, November 2023, ISBN: 9798381159875, https://digitalcommons.du.edu/etd/2340/

Andreassen, T.E., Laz P.J., Erdemir, A., Besier, T.F., Halloran, J.P., Imhauser W.C., Chokhandre, S., Schwartz, A., Nohouji, N.A., Rooks, N.B., Schneider, M.T.Y., Elmasry, S., Zaylor, W., Hume, D.R., Shelburne, K.B., "Deciphering the "Art" in Modeling and Simulation of the Knee Joint: Assessing Model Calibration Workflows and Outcomes", Journal of Biomechanical Engineering, vol 145, October 2023, pp. 1-13, https://doi.org/10.1115/1.4063627

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Walker, K.E., Higinbotham, S.E., Shelburne, K.B., "Three-dimensional lower extremity musculoskeletal geometry of the Visible Human Female and Male", Scientific Data, vol. 10, issue 1, January 2023, pp 1-6, https://doi.org/10.1038/s41597-022-01905-2

Andreassen, T.E., Hamilton, L.D., Hume, D., Higinbotham, S.E., Behnam, Y., Clary, C., Shelburne, K.B., "Apparatus for *In Vivo* Knee Laxity Assessment Using High-Speed Stereo Radiography", Journal of Medical Devices, vol. 15, issue 4, December 2021, pp 1-9, https://doi.org/10.1115/1.4051834

Andreassen, T.E., "In Vivo Data Capture Using HSSR for Calibration of Computational Models", ProQuest ETD, June 2021, pp 1-161, https://digitalcommons.du.edu/etd/1717/

Burton, W., Rivero Crespo, I., **Andreassen, T.**, Pryhoda, M., Jensen, A., Myers, C., Shelburne, K., Banks, S., Rullkoetter, P., "Fully automatic tracking of native glenohumeral kinematics from stereo-radiography", Computer in Biology and Medicine, vol. 163, September 2023, pp. 107189, https://doi.org/10.1016/j.compbiomed.2023.107189

Hamilton, L.D., **Andreassen, T.E.**, Myers, C.A., Shelburne, K.B., Clary, C.W., Rullkoetter, P.J., "Knee pivot location in asymptomatic older adults", Journal of Biomechanics, vol. 149, February 2023, pp. 111487, https://doi.org/10.1016/j.jbiomech.2023.111487

Hamilton, L.D., **Andreassen, T.E.**, Myers, C., Shelburne, K.B., Chadd, C., Rullkoetter, P.J., "Supine leg press as an alternative to standing lunge in high-speed stereo radiography", Journal of Biomechanics, vol. 138, June 2022, pp. 1-9, https://doi.org/10.1016/j.jbiomech.2022.111118

Chen, X., **Andreassen, T.E.**, Myers, C.A., Clary, C.W., Coombs, W., DeWall, R.J., Fritz, B., Bracey D.N., Hedge, V., Rullkoetter P.J., "Impact of periprosthetic femoral fracture fixation plating constructs on local stiffness, load transfer, and bone strains, Journal of the Mechanical Behavior of Biomedical Materials, vol. 125, January 2022, pp 1-10, https://doi.org/10.1016/j.jmbbm.2021.104960

Publications in Press, Review, and Preparation

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Hegg, S.L., Higinbotham, S.E., Shelburne, K.B., "Validating Subject-Specific Knee Models from In Vivo Measurements", Frontiers in Bioengineering and Biotechnology (in review)

Trentadue, T.P., Thoreson, A.R., **Andreassen, T.E.**, Lopez C., Holmes III, D.R. , Leng, S., Kakar, S., Zhao, K., "A novel pipeline using statistical parametric mapping for improved assessment of differences in three- and four-dimensional computed tomography-derived arthrokinematics", Journal of Biomechanics (in review)

Curran, B.M., Myers, C.A., Laz, P.J., Andreassen, T.E., Rivero-Crespo, I., Walden, S.R., Shelburne, K.B., "Contributions of Muscle Forces to Stability and Mobility in Fluoroscopy-driven Models of Total Shoulder Arthroplasty", Journal of Biomechanical Engineering (in review)

Pryhoda, M.K, Walden, S., Weinstein, D., **Andreassen, T.E.**, Rivero Crespo, I., Hamilton, L.D., Myers, C.A., Shelburne, K.B., "Functional range of motion recovery following total shoulder arthroplasty", Journal of Orthopaedic Research (in preparation)

INVITED TALKS, LECTURES AND PRESENTATIONS (*PRESENTING AUTHOR)

Invited Talks

Halloran, J.*, Imhauser, C.*, **Andreassen, T.E.***, Nazem, M.*, Kim, N.*, Moyle, K.*, "KneeHub - An evolving community-driven resource towards reproducible open-source knee modeling and simulation", Building a Roadmap for an Open Source Ecosystem for Computational Knee Biomechanics, Cleveland Clinic, Cleveland, OH, Online, April 2025

Andreassen, T.E.*, "Subject-specific finite element modelling as a tool for improved understanding of musculoskeletal injuries in the wrist", Musculoskeletal Research Conference, Orthopaedics Department, Mayo Clinic, Rochester, MN, Online, October 2024

Andreassen, T.E.*, "Subject-Specific Computer Models of the Knee from In Vivo Subject-Specific Measurements", Morgenthaler Symposium Invited Talks, Lerner Research Institute, Cleveland Clinic, Cleveland, OH, January 2023

Lectures

Andreassen, T.E.*, "Computational Modeling and Simulation", Biomedical Applications of Engineering, Graduate School of Biomedical Sciences, Mayo Clinic, Rochester, MN, January 2025

Hamilton, L.D.*, **Andreassen, T.E.***, "High-Speed Stereo Radiography: Clinical Use in Biomechanics", Department of Mechanical Engineering, Colorado School of Mines, Golden CO, Online, September 2020

Podium Presentations

Andreassen, T.E.*, Trentadue, T.P., Thoreson, A.R., Andreassen, T., An, K., Kakar, S., Zhao, K., "The Influence of Ligament Injuries on Wrist Contact Pressure Via Monte Carlo and Finite Element Analysis", Digital Twins Research Interest Group - Orthopaedic Research Society Annual Meeting, Phoenix, AZ, February 2025

Andreassen, T.E.*, Laz, P.J., Myers, C.A., Shelburne, K.B., "Toward an Accurate Digital Twin: In Vivo Model Calibration", Visible Physiological Human (VPH) Annual Conference, Stuttgart, Germany, September 2024

Halloran J.*, Laz, P., Shelburne, K., **Andreassen, T.**, Imhauser, C., Besier, T., Erdemir, A., "Lessons Learned From The Kneehub Project - Harmonizing Knee Simulation Results Across Five Independent Teams", Orthopaedic Research Society Annual Meeting, Long Beach, CA, February 2024

Andreassen, T.E*, Laz, P.J., Erdemir, A., Besier, T.F., Imhauser, C.W., Halloran, J.P., Hume, D.R., Chokhandre, S.K., Schwartz, A., Abdollahi Nohouji, N., Rooks, N.B., Schneider, M.T., Elmasry, S., Zaylor, W., Shelburne, K.B., "Influence Of

Modeling Workflow And Calibration Strategy On The Reproducibility Of Knee Kinematic Predictions", Orthopaedic Research Society Annual Meeting, Dallas, TX, February 2023

Andreassen, T.E., Hume, D.R., Hamilton, L.D.*, Higinbotham, S.E., Shelburne, K.B., "Smooth 2D and 3D FEA mesh over-closure and gap adjustment using radial basis function networks", Rocky Mountain American Society of Biomechanics Annual Meeting, Estes Park, CO, April 2022

Higinbotham, S.E.*, **Andreassen, T.E.**, Myers, C.A., Shelburne, K.B., "Addition of an IT-Band Representation Reduces Knee Adduction Moments in Gait Simulations", Rocky Mountain American Society of Biomechanics Annual Meeting, Estes Park, CO, April 2022

Chen, X.*, **Andreassen, T.E.**, Myers, C., Clary, C., Coombs, D., DeWall, R., Fritz, B., Bracey, D., Hedge, V., Rullkoetter, P., "Impact Of Periprosthetic Femoral Fracture Fixation Plating On Local Stiffness, Load Transfer And Bone Strains", Orthopaedic Research Society Annual Meeting, Tampa, FL, 2022

Poster Presentations (*Presenting Author)

Andreassen, T.E.*, Trentadue, T.P., Thoreson, A.R., Andreassen, T., An, K., Kakar, S., Zhao, K., "The Influence of Ligament Injuries on Wrist Contact Pressure Via Monte Carlo and Finite Element Analysis", Orthopaedic Research Society Annual Meeting, Phoenix, AZ, February 2025

Trentadue, T.*, Lopez C., Thoreson, A., **Andreassen, T.**, Leng, S., Kakar, S., Zhao, K., "Statistical Parameteric Mapping Reveals Positional Differences in Four-Dimensional Computed Tomography Derived Wrist Interosseous Proximity Distributions", American Society of Biomechanics Annual Meeting, Madison, WI, August 2024

Andreassen, T.E.*, Trentadue, T.P., Thoreson, A.R., Zhao, K.D., "Subject-Specific Finite Element Modelling of Wrist Injury Mechanisms", University of Minnesota and Mayo Clinic Musculoskeletal Researchers Conference, Minneapolis, Minnesota, May 2024

Hamilton, L.D.*, **Andreassen, T.E.**, Myers, C.A. Myers, Shelburne, K.B., Chadd, C., Rullkoetter, P.J., "How Many Subjects Have A Uniform Pivot Pattern Over Multiple Activities Of Daily Living?", American College of Sports Medicine Annual Meeting, Denver, CO, September 2023

Alsaadi, O.*, Pryhoda, M., **Andreassen, T.E.**, Sabick, M.B., "Comparison of Right and Left Shoulder Girdle Joints for Healthy Subjects", Rocky Mountain American Society of Biomechanics Annual Meeting, Estes Park, CO, April 2023

Hamilton, L.D., Higinbotham, S.E., **Andreassen, T.E.***, Ho, C.P., Shelburne, K.B., "Lower Body MRI For Image Tracking And 3D Modeling", Orthopaedic Research Society Annual Meeting, Dallas, TX, 2023

Rivero Crespo, I.*, Pryhoda, M., Walden, S., **Andreassen, T.**, Hamilton, L., Higinbotham, S., Myers, C., Laz, P., Weinstein, D., Shelburne, K., "Comparison of Glenohumeral and Scapulothoracic Range of Motion in Individuals with TSA", Rocky Mountain American Society of Biomechanics Annual Meeting, Estes Park, CO, April 2022

Pryhoda, M.*, Walden, S., **Andreassen, T.**, Hamilton, L., Higinbotham, S., Myers, C., Rivero Crespo, I., Weinstein, D., Shelburne, K., "Range And Composition Of Internal And External Rotation In Individuals With TSA", Orthopaedic Research Society Annual Meeting, Tampa, FL, 2022

Andreassen, T.E.*, Hamilton, L.D., Hume, D., Higinbotham, S.E., Behnam, Y., Clary, C., Shelburne, K.B., "Validation of a custom device for knee laxity measurement using stereo radiography", Summer Biomechanics, Bioengineering, and Biotransport (SB3C) Conference, Online, June 2020

DEVELOPED RESOURCES

Datasets

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Hegg, S.L., Higinbotham, S.E., Shelburne, K.B., "Subject-specific knee models, data, and results for specimen S193761", Data Dryad, 2025, https://doi.org/10.5061/dryad.zcrjdfnpv

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Hegg, S.L., Higinbotham, S.E., Shelburne, K.B., "Subject-specific knee models, data, and results for specimen S192803", Data Dryad, 2024, https://doi.org/10.5061/dryad.zkh1893gw

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Walker, K.E., Higinbotham, S.E., Shelburne, K.B., "Visible Human Female", Digital Commons, 2022, https://doi.org/10.56902/COB.vh.2022.1

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Walker, K.E., Higinbotham, S.E., Shelburne, K.B., "Visible Human Male", Digital Commons, 2022, https://doi.org/10.56902/COB.vh.2022.2

Models

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Hegg, S.L., Higinbotham, S.E., Shelburne, K.B., "Subject-specific knee models, data, and results for specimen S193761", Zenodo, 2025, https://doi.org/10.5281/zenodo.14664714

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Hegg, S.L., Higinbotham, S.E., Shelburne, K.B., "Subject-specific knee models, data, and results for specimen S192803", Zenodo, 2024, https://doi.org/10.5281/zenodo.10416663

Software Packages and Algorithms

Andreassen, T.E., Hume, D.R., Hamilton, L.D., Higinbotham, S.E., Shelburne, K.B., "Finite Element Mesh Overclosure Reduction and Slicing Code", GitHub, 2024, https://github.com/thor-andreassen/femors

Andreassen, T.E., "Fast Point2TriMesh", GitHub, 2023, https://github.com/thor-andreassen/Fast_Point2TriMesh

REFERENCES

Dr. Kristin D. Zhao, Director and Senior Consultant
Biomedical Engineering and Physiology Program
Physical Medicine and Rehabilitation
Mayo Clinic,
200 First St. SW
Rochester, MN 55905
Phone: 507-269-1153
Email: zhao.kristin@mayo.edu

Dr. Kevin B. Shelburne, Research Professor
Department of Mechanical and Materials Engineering
University of Denver
2155 E. Wesley Ave.
Denver, CO 80210
Phone: 303-871-6435
Email: kevin.shelburne@du.edu

Dr. Peter J. Laz, Professor, and Department Chair
Department of Mechanical and Materials Engineering
University of Denver
2155 E. Wesley Ave.
Denver, CO 80210
Phone: 303-871-3614
Email: peter.laz@du.edu

Andrew R. Thoreson, Assistant Professor and Senior Engineer
Assistive and Restorative Technology Laboratory
Physical Medicine and Rehabilitation
Mayo Clinic,
Mayo Clinic,
200 First St. SW
Rochester, MN 55905
Phone: 507-993-0427
Email: thoreson.andrew@mayo.edu

Dr. Ahmet Erdemir, Director
Computational Biomodeling (CoBi) Core
Lerner Research Institute
Cleveland Clinic
9500 Euclid Avenue
Cleveland, OH 44195
Phone: 216-702-0552
Email: erdemira@ccf.org

Dr. Carl W. Imhauser, Associate Scientist and Associate Professor
Research Division
Hospital for Special Surgery
535 East 70th Street
New York, NY 10021
Phone: 212-606-1079
Email: imhauserc@hss.edu

Steve Buscarello, President
Update International Inc.
1075 S. Yukon St.
Lakewood, CO 80226
Phone: 720-394-8633
Email: steve@updateinternational.com

Dr. Landon D. Hamilton, Research Scientist
Medical Center of the Rockies
2500 Rocky Mountain Ave.
Suite 1508
Loveland, CO 80538
Phone: 419-957-0909
Email: landon.hamilton@uchealth.org

Dr. Donald R. Hume, Staff Engineer – Advanced Technology
Paragon 28
14445 Grasslands Dr.
Englewood, CO 80112
Phone: 267-614-6925
Email: donaldhume@gmail.com