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– March 21, 2024 –

EDUCATION AND PROFESSIONAL HISTORY

- 1985 B.S.E. Biomedical Engineering, The University of Iowa, Iowa City, IA
- 1986 M.S. Mechanical Engineering (Biomechanics emphasis), The University of Iowa, Iowa City, IA
- 1989 Ph.D. Mechanical Engineering (Biomechanics emphasis), The University of Iowa, Iowa City, IA

Professional and Academic Positions

- 1990 – 1997 Director, Biomechanics Research Laboratory, Allegheny-Singer Research Institute, Pittsburgh, PA
Adjunct Assistant Professor, Mechanical Engineering, University of Pittsburgh, Pittsburgh, PA
- 1990 – 1994 Research Assistant Professor of Orthopaedic Surgery, Medical College of Pennsylvania, Pittsburgh, PA
- 1994 – 1997 Lecturer, Biomedical Engineering Program, Carnegie Mellon University, Pittsburgh, PA
Assistant Professor of Orthopaedic Surgery, Allegheny University of the Health Sciences, Pittsburgh, PA
- 1996 Visiting Assistant Professor, McCaig Center for Joint Injury and Arthritis Research,
University of Calgary, Calgary, Alberta, Canada
- 1997 – 2002 Director, Biomechanics Laboratory, Minneapolis Sports Medicine Center, Minneapolis, MN
- 1999 – 2002 Assistant Professor, Orthopaedic Surgery, University of Minnesota, Minneapolis, MN
- 2001 – 2002 Lecturer and Graduate Faculty, Biomedical Engineering, University of Minnesota, Minneapolis, MN

- 2002 – The University of Iowa, Iowa City, IA
 - 2002 – 2008 Associate Research Engineer, Department of Orthopedics and Rehabilitation
 - 2004 – 2009 Adjunct Assistant Professor, Department of Biomedical Engineering
 - 2008 – 2009 Research Engineer, Department of Orthopedics and Rehabilitation
 - 2009 – 2010 Research Associate Professor, Orthopedics and Rehabilitation & Biomedical Engineering
 - 2010 – 2016 Associate Professor, Orthopedics and Rehabilitation & Biomedical Engineering
 - 2013 – 2016 Adjunct Associate Professor, Department of Mechanical and Industrial Engineering
 - 2013 – 2014 Co-Director, Orthopedic Biomechanics Laboratory
 - 2014 – Director, Orthopedic Biomechanics Laboratory
 - 2016 – Professor, Orthopedics and Rehabilitation, Biomedical Engineering,
and Industrial Engineering
 - 2016 – Vice Chair of Research, Orthopedics and Rehabilitation
 - 2019 – Richard and Jan Johnston Chair in Orthopedic Biomechanics

- 2017 Visiting Research Fellow in Mechanical Engineering, Institute of Medical and Biological Engineering
University of Leeds, Leeds, England, UK
- 2022 Killam Visiting Scholar, University of Calgary, Calgary, Alberta, Canada
- 2022 Visiting Professor, University of Eastern Finland, Kuopio, Finland
- 2022 – Adjunct Professor, Kinesiology, University of Calgary, Calgary, Alberta, Canada

Honors and Awards

- 1983 Elected to Tau Beta Pi (Engineering Honor Society)
- 1989 Young Scientist Award (Pre-Doctoral), American Society of Biomechanics
- 2000 Travel Award, American Society of Biomechanics
- 2006 MicroStrain Award (co-author), American Society of Biomechanics
- 2007 Kathryn Cramer Outstanding Clinical Paper Award (co-author), Ruth Jackson Orthopaedic Society
- 2008 Best Paper, Basic Science Focus Forum – 24th Annual Meeting of the Orthopaedic Trauma Association
- 2009 Michael Bonfiglio Award for Student Research in Orthopaedic Surgery (co-author), University of Iowa
Department of Orthopaedics & Rehabilitation and the Iowa Orthopaedic Society
- 2010 Clinical Biomechanics Award (co-author), American Society of Biomechanics
Third Prize, MICCAI Grand Challenge 2010: Segmentation of Knee Images (co-author)
Best Podium Presentation, 2nd Congress of the International Foot and Ankle Biomechanics Community

- 2011 OREF Clinical Research Award, American Academy of Orthopaedic Surgeons
Best Presentation, 19th Annual Symposium on Computational Methods in Orthopaedic Biomechanics (co-author)
Best Presentation, UIHC Graduate Medical Education Leadership Symposium (co-author)
- 2013 New Investigator Recognition Award Paper (co-author), Orthopaedic Research Society
Third place, UIHC Graduate Medical Education Leadership Symposium (co-author)
- 2014 Fellow, American Society of Biomechanics
- 2018 Michael Bonfiglio Award for Student Research in Orthopedic Surgery (co-author), University of Iowa
Department of Orthopedics & Rehabilitation and the Iowa Orthopaedic Society
- 2018 Clinical Biomechanics Award (co-author), American Society of Biomechanics, for the paper entitled “Contact
Stress Over-Exposure Correlates with OA Development in Acetabular Fractures”
- 2019 U.S. Patent #10,325,380 B2 – Issued June 18, 2019. Thomas GW, Long SA, Anderson DD. *Precise, low-cost
orthopaedic surgical simulator*. [Current Assignee University of Iowa Research Foundation].
- 2019 Appointed as the Richard and Jan Johnston Chair in Orthopedic Biomechanics
- 2022 Fellow, Orthopaedic Research Society
Fellow, American Institute of Medical and Biological Engineering
New Investigator Recognition Award Paper (co-author), Orthopaedic Research Society Annual Meeting

Entrepreneurial Activities

- 2011 Co-founded the company *FxRedux Solutions* – commercializing technologies developed with NIH funds
- 2011 – 2013 Served as CEO of *FxRedux Solutions* during startup period
- 2011 Iowa Centers for Enterprise (ICE) New Venture Challenge (1st), Merle Volding Business Plan Competition
(1st), ICE Elevator Pitch Competition (3rd), Pappajohn Iowa Business Plan Competition (Finalist)
- 2012 Pappajohn Iowa Business Plan Competition (3rd place, state-wide)
- 2013 Secured \$150,000 Demonstration Fund loan from Iowa Economic Development Authority
- 2016 Co-founded the company *Iowa Simulation Solutions, LLC* – commercializing orthopedic surgical simulators
- 2021 Secured \$25,000 Proof of Commercial Relevance Fund loan from Iowa Economic Development Authority

TEACHING

- 057:010 Dynamics, Teaching Assistant, College of Engineering, The University of Iowa (two semesters)
- 051:153 Biomechanics of Orthopaedic Devices, College of Engineering, The University of Iowa
- MPT 609 Biomechanics, Master’s in Physical Therapy Program, The College of St. Catherine, Minneapolis, MN
- BMEn 5201 Advanced Biomechanics, Biomedical Engineering, University of Minnesota (2 terms)
- MMSE 809 Biomaterials in the Design of Medical Devices, Engineering & Technology Management, U. of St. Thomas
- PD460 Biomaterials – Course Director, ASME Bioengineering Technology Seminar (2003, 2004)

Biomechanics and Biomaterials instructional series, Residency Program in Orthopedic Surgery, first at Allegheny University of the Health Sciences (5 years), then at the University of Minnesota/Minneapolis Sports Medicine Center (5 years), and now at the University of Iowa (10 years)

Invited Academic Seminars / Lectures:

Orthopaedic Biomechanics Laboratory, Mayo Clinic; Musculoskeletal Research Center, University of Pittsburgh; Research Seminar, Joint Injury & Arthritis Research Group, University of Calgary; Biomedical Engineering Seminar, University of Minnesota; Graduate Mechanical Engineering Seminar, University of Pittsburgh; Graduate Bioengineering Seminar, Carnegie Mellon University; Graduate BME Seminar, The University of Iowa; Graduate Seminar, Mechanical and Industrial Engineering, The University of Iowa; Center for Exercise Science Research Seminar, University of Florida; Bioengineering Program, University of Kansas; VA Center of Excellence for Limb Loss Prevention and Prosthetic Engineering, Seattle, WA; INSIGNEO Institute for in silico Medicine, University of Sheffield, Sheffield, England; Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, England; Institute of Medical and Biological Engineering, School of Mechanical Engineering, University of Leeds, Leeds, England; Center for Applied Biomechanics, University of Virginia; Biophysics of Bone and Cartilage Research Group Meeting, University of Eastern Finland, Kuopio, Finland; Human Performance Laboratory Seminar, University of Calgary, Calgary, Alberta, Canada; AOFAS 2022 Annual Meeting, Quebec City, Quebec, Canada; Musculoskeletal Diseases Seminar, University of Eastern Finland, Kuopio, Finland; Marquette University, Milwaukee, WI.

Theses Directed/Supervised

- 1991 *Physical Modelling of Hip Joint Forces in Stair Climbing*.
M.S. Thesis, F.J. Shelley, Department of Mechanical Engineering, University of Pittsburgh.

- 1994 *Displaced Intra-Articular Fractures of the Distal Radius: The Effect of Fracture Displacement on Contact Stresses in a Cadaver Model.*
M.S. Thesis, J.D. DesJardins, Department of Mechanical Engineering, University of Pittsburgh.
- 1996 *The Effect of Acetabular Component Orientation On Load Transfer Through the Cadaver Pelvis.*
M.S. Thesis, R.R. Klein, Department of Mechanical Engineering, University of Pittsburgh.
- 1997 *A Three-Dimensional Contact-Coupled Finite Element Model of the Radiocarpal Joint.*
Ph.D. Dissertation, B.R. Deshpande, Bioengineering Program, Carnegie Mellon University.
- 2006 *A Methodology for Patient-Specific Finite Element Analysis of Chronic Contact Stress Exposure in the Ankle.*
M.S. Thesis, J.K. Goldsworthy, Department of Biomedical Engineering, The University of Iowa.
- 2007 *A Patient-Specific Finite Element Investigation of the Influence of Incongruities on Chronic Stress Exposure in the Ankle.* M.S. Thesis, W. Li, Department of Biomedical Engineering, The University of Iowa.
- 2007 *Development and Implementation of CT-Based Measures for Objective Fracture Severity Assessment.*
M.S. Thesis, T.P. Thomas, Department of Biomedical Engineering, The University of Iowa.
- 2010 *Virtual Pre-Operative Reconstruction Planning for Comminuted Articular Fractures*
Ph.D. Dissertation, T.P. Thomas, Department of Biomedical Engineering, The University of Iowa.
- 2010 *Loading and Unloading in the Development and Treatment of Osteoarthritis.*
Ph.D. Thesis, F. Intema, Department of Orthopaedics, University Medical Center, Utrecht, The Netherlands.
- 2011 *Large population evaluation of contact stress exposure in articular joints for prediction of osteoarthritis onset and progression.* M.S. Thesis, A.M. Kern, Department of Biomedical Engineering, The University of Iowa.
- 2012 *Development of an Expedited Objective Fracture Severity Assessment Methodology*
M.S. Thesis, A.T. Kilburg, Department of Biomedical Engineering, The University of Iowa.
- 2013 *Surgical Simulation Training Models for Orthopaedic Fracture Surgery*
M.S. Thesis, G.T. Ohrt, Department of Biomedical Engineering, The University of Iowa.
- 2014 *The effect of arch insoles on tibial rotation and tibiofemoral contact stress*
M.S. Thesis, S. Waheed, Department of Biomedical Engineering, The University of Iowa.
- 2014 *Parametric Finite Element Analyses of Reverse Shoulder Arthroplasty Design*
M.S. Thesis, V.N. Permeswaran, Department of Biomedical Engineering, The University of Iowa.
- 2014 *Early Targeting of Knee Osteoarthritis: Validation of Computational Contact Stress Assessment*
M.S. Thesis, T.J. Stockman, Department of Biomedical Engineering, The University of Iowa.
- 2015 *Objective CT-Based Method for Quantifying Articular Fracture Severity: Clinical Application in Multiple Joints*
M.S. Thesis, K.A. Dibbern, Department of Biomedical Engineering, The University of Iowa.
- 2016 *Developing and Implementing a Computer Vision Based Surgical Simulator for Hip Wire Navigation*
M.S. Thesis, S.A. Long, Department of Biomedical Engineering, The University of Iowa.
- 2016 *Objective Measures of Operating Room Wire Navigation Performance*
M.S. Thesis, L.K. Taylor, Department of Biomedical Engineering, The University of Iowa.
- 2016 *Measuring Hip Fracture Fixation Guide Wire Placement for Performance Assessment in Simulation and the Operating Room.* M.S. Thesis, C.E.Q. Rink, Department of Biomedical Engineering, The University of Iowa.
- 2017 *Development of a Computational Model to Study Instability and Scapular Notching in Reverse Shoulder Arthroplasty.* Ph.D. Thesis, V.N. Permeswaran, Department of Biomedical Engineering, The University of Iowa.
- 2017 *Intra-operative Biomechanical Analysis for Improvement of Intra-articular Fracture Reduction*
Ph.D. Thesis, A.M. Kern, Department of Biomedical Engineering, The University of Iowa.
- 2017 *A Computational Investigation of Patient Factors Contributing to Contact Stress Abnormalities in the Dysplastic Hip Joint.* M.S. Thesis, H.D. Thomas, Department of Biomedical Engineering, The University of Iowa
- 2018 *The Effects of Implant Design Variations on Shoulder Instability Following Reverse Shoulder Arthroplasty*
M.S. Thesis, A.P. Caceres, Department of Biomedical Engineering, The University of Iowa
- 2019 *Orthopaedic Surgical Skills: Examining How We Train and Measure Performance in Wire Navigation Tasks*
Ph.D. Thesis, S.A. Long, Department of Biomedical Engineering, The University of Iowa.
- 2019 *Utilizing Objective Measures of Acute and Chronic Mechanical Insult to Determine Their Contribution to Post-Traumatic Osteoarthritis Risk*
Ph.D. Thesis, K.A. Dibbern, Department of Biomedical Engineering, The University of Iowa.
- 2020 *Measuring 3D Joint Space Width from Weight Bearing CT to Monitor Progression of Knee Osteoarthritis*
M.S. Thesis, M.S. Ho, Department of Biomedical Engineering, The University of Iowa

- 2020 *A Computational Framework for Custom Orthosis Prescription to Reduce Post-Traumatic Osteoarthritis Risk*
M.S. Thesis, B.D. Tanner, Department of Biomedical Engineering, The University of Iowa
- 2021 *Incorporating In Vivo Data Into a Computational Modeling Framework to Assess the Effects of Carbon Fiber Bracing on Ankle Joint Function and Contact Mechanics*
M.S. Thesis, M.A. Corlett, Department of Biomedical Engineering, The University of Iowa
- 2022 *Fully Automated 3D Joint Space Width Analysis of the Tibiofemoral Joint from Weight Bearing CT*
M.S. Thesis, E. McFadden, Department of Biomedical Engineering, The University of Iowa
- 2022 *Assessment of Post-Traumatic Osteoarthritis Following Tibial Pilon Fracture Using Weight Bearing CT*
M.S. Thesis, M. Carlson, Department of Biomedical Engineering, The University of Iowa
- 2022 *The Effect of Training on Surgical Resident Skill Acquisition*
M.S. Thesis, T. Kurtzhals, Department of Industrial & Systems Engineering, The University of Iowa
- 2022 *Acute Fracture Severity, Chronic Contact Stress, and Temporal Changes in 3D Joint Space Width Following Tibial Pilon Fracture*
M.S. Thesis, H. Smith, Department of Biomedical Engineering, The University of Iowa
- 2022 *Fluoroscopy Use Analysis of Cephalomedullary Nail Procedures Performed by Surgical Residents*
M.S. Thesis, E. William, Department of Industrial & Systems Engineering, The University of Iowa
- 2023 *Dependence of Implant-Bone Micromotion on Total Ankle Replacement Design Features, Amount of Interference Press-Fit, and Local Bone Density*
M.S. Thesis, G. Clarke, Department of Biomedical Engineering, The University of Iowa
- In Process *Validating a computational modeling framework to assess the effects of carbon fiber bracing on ankle joint function and contact mechanics*
Ph.D. Thesis, L. Williams, Department of Biomedical Engineering, The University of Iowa
- In Process *Utilizing Weight Bearing CT to Evaluate Post-Traumatic Osteoarthritis Risk After ACL Reconstruction*
M.S. Thesis, T. Marquez, Department of Biomedical Engineering, The University of Iowa
- In Process *Predictors of Post-Traumatic Osteoarthritis Risk After Tibial Pilon Fracture*
M.S. Thesis, T. Miller, Department of Biomedical Engineering, The University of Iowa

SCHOLARSHIP

Peer-Reviewed Papers

1. Brown TD, **Anderson DD**, Nepola JV, Singerman RJ, Pedersen DR, Brand RA. Contact stress aberrations following imprecise reduction of simple tibial plateau fractures. *J Orthop Res*. 1988;6(6):851–62. doi.org/10.1002/jor.1100060609. PMID: 3171765.
2. Nelson BH, **Anderson DD**, Brand RA, Brown TD. Effect of osteochondral defects on articular cartilage: Contact pressures studied in dog knees. *Acta Orthop Scand*. 1988 Oct;59(5):574–9. doi.org/10.3109/17453678809148788. PMID: 3188865.
3. Meyer SJ, Brown TD, Jimenez ML, Van Hoeck JE, **Anderson DD**, Brand RA. Benchtop mechanical performance of prophylactic knee braces under dynamic valgus loading: A cadaver study. *Iowa Orthop J*. 1989;9:92–97. PMID: PMC2328899.
4. **Anderson DD**, Brown TD, Yang KH, Radin EL. A dynamic finite element analysis of impulsive loading of the extension-splinted rabbit knee. *J Biomech Eng*. 1990 May;112(2):119–28. doi.org/10.1115/1.2891162. PMID: 2345441.
5. **Anderson DD**, Brown TD, Radin EL. Stress wave effects in a finite element analysis of an impulsively loaded articular joint. *Proc Inst Mech Eng H: The Journal of Engineering in Medicine*. 1991;205(1):27–34. doi.org/10.1243/PIME_PROC_1991_205_258_02. PMID: 1670072.
6. **Anderson DD**, Brown TD, Radin EL. The influence of basal cartilage calcification on dynamic juxtaarticular stress transmission. *Clin Orthop Relat Res*. 1993 Jan;286:298–307. PMID: 8425361.
7. **Anderson DD**, Daniel TE. A contact coupled finite element analysis of the radiocarpal joint. *Semin Arthroplasty*. 1995;6(1):30–6. PMID: 10155684.

8. Loebig TG, **Anderson DD**, Baratz ME, Imbriglia JE. Radial instability of the metacarpophalangeal joint of the thumb: A biomechanical investigation. *J Hand Surg Br.* 1995 Feb;20(1):102–104. doi.org/10.1016/s0266-7681(05)80026-9. PMID: 7759918.
9. Richman JD, Daniel TE, **Anderson DD**, Miller PL, Douglas RA. Biomechanical evaluation of cervical spine stabilization methods using a porcine model. *Spine (Phila Pa 1976).* 1995 Oct 15;20(20):2192–7. doi.org/10.1097/00007632-199510001-00003. PMID: 8545711.
10. **Anderson DD**, Bell AL, Gaffney MB, Imbriglia JE. Contact stress distributions in malreduced intraarticular distal radius fractures. *J Orthop Trauma.* 1996;10(5):331–7. doi.org/10.1097/00005131-199607000-00007. PMID: 8814574.
11. Shelley FJ, Anderson DD, Kolar MJ, Miller MC, Rubash HE. Physical modelling of hip joint forces in stair climbing. *Proc Inst Mech Eng H: The Journal of Engineering in Medicine.* 1996;210(1):65–68. doi.org/10.1243/PIME_PROC_1996_210_391_02. PMID: 8663894.
12. Baratz ME, Des Jardins JD, **Anderson DD**, Imbriglia JE. Displaced intra-articular fractures of the distal radius: The effect of fracture displacement on contact stresses in a cadaver model. *J Hand Surgery.* 1996 Mar;21(2):183–8. doi.org/10.1016/s0363-5023(96)80098-0. PMID: 8683044.
13. Morgan EA, McElroy JJ, Des Jardins JD, **Anderson DD**, Steensen RN. The effect of intercondylar notchplasty on the patellofemoral articulation. *Am J Sports Med.* 1996 Nov-Dec;24(6):843–6. doi.org/10.1177/036354659602400622. PMID: 8947409.
14. Loebig TG, Badia A, **Anderson DD**, Baratz ME. Correlation of wrist ligamentotaxis with carpal distraction: implications for external fixation. *J Hand Surgery Am.* 1997 Nov;22(6):1052–6. doi.org/10.1016/S0363-5023(97)80048-2. PMID: 9471076.
15. Kurtz C, **Anderson DD**, Loebig TG, DeMeo PJ, Campbell PG. Insulin-like growth factor I accelerates functional recovery following rat Achilles tendon injury. *Am J Sports Med.* 1999 May-Jun;27(3):363–9. doi.org/10.1177/03635465990270031701. PMID: 10352775.
16. **Anderson DD**, Campbell PG, Guanche CA. The use of biological agents to accelerate recovery from rotator cuff repair: Path to clinical application. *Oper Techniq Sports Med.* 2002 Apr;10(2):58–63. doi.org/10.1053/otsm.2002.31604.
17. Rundquist PJ, **Anderson DD**, Guanche CA, Ludewig PM. Shoulder kinematics in subjects with frozen shoulder. *Arch Phys Med Rehabil.* 2003 Oct;84(10):1473–1479. doi.org/10.1016/s0003-9993(03)00359-9. PMID: 14586914.
18. **Anderson DD**, Muehling VL, Marsh JL, Brown TD. Precise identification of bone fragment boundaries to assist in reduction of highly comminuted fractures. *Comput Aided Surg.* 2004 June;9(3):116.
19. **Anderson DD**, Deshpande BR, Daniel TE, Baratz ME. A three-dimensional finite element model of the radiocarpal joint: Distal radius fracture step-off and stress transfer. *Iowa Orthop J.* 2005;25:108–117. PMID: 16089082; PMCID: PMC1888764.
20. Beardsley CL, **Anderson DD**, Marsh JL, Brown TD. Interfragmentary surface area as an index of comminution severity in cortical bone impact. *J Orthop Res.* 2005 May;23(3):686–90. doi.org/10.1016/j.orthres.2004.09.008. PMID: 15885492; PMCID: PMC2194755.
21. **Anderson DD**, Goldsworthy JK, Shivanna K, Grosland NM, Pedersen DR, Thomas TP, Tochigi Y, Marsh JL, Brown TD. Intra-articular contact stress distributions at the ankle throughout stance phase—Patient-specific finite element analysis as a metric of degeneration propensity. *Biomech Model Mechanobiol.* 2006 Jun;5(2–3):82–89 doi.org/10.1007/s10237-006-0025-2. PMID: 16520960; PMCID: PMC2194754.
22. Millington SA, Grabner M, Wozelka R, **Anderson DD**, Hurwitz SR, Crandall JR. Quantification of ankle articular cartilage topography and thickness using a high resolution stereophotography system. *Osteoarthritis Cartilage.* 2007 Feb;15(2):205–11. doi.org/10.1016/j.joca.2006.07.008. PMID: 16949841.
23. **Anderson DD**, Goldsworthy JK, Li W, Rudert MJ, Tochigi Y, Brown TD. Physical validation of a patient-specific contact finite element model of the ankle. *J Biomech.* 2007;40(8):1662–9. doi.org/10.1016/j.jbiomech.2007.01.024. PMID: 17433333; PMCID: PMC1945165.
24. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. A method for the estimation of normative bone surface area to aid in objective CT-based fracture severity assessment. *Iowa Orthop J.* 2008;28:9–13. PMID: 19223942; PMCID: PMC2603343.

25. Li W, **Anderson DD**, Goldsworthy J, Marsh JL, Brown TD. Patient-specific finite element analysis of chronic contact stress exposure after intra-articular fracture of the tibial plafond. *J Orthop Res*. 2008 Aug;26(8):1039–45. doi.org/10.1002/jor.20642. PMID: 18404662; PMCID: PMC2562934.
26. **Anderson DD**, Mosqueda TV, Thomas TP, Hermanson EL, Brown TD, Marsh JL. Quantifying tibial plafond fracture severity: Absorbed energy and fragment displacement agree with clinical rank ordering. *J Orthop Res*. 2008 Aug;26(8):1046–52. doi.org/10.1002/jor.20550. PMID: 18327811; PMCID: PMC2562904.
27. Muehleman C, Connor D, Fyhrie DP, Marsh JL, **Anderson D**. On the horizon from the ORS: X-rays for soft-tissue imaging. *J Am Acad Orthop Surg*. 2009 July;17(7):473–476. doi.org/10.5435/00124635-200907000-00008.
28. Thomas TP, Van Hofwegen CJ, **Anderson DD**, Brown TD, Marsh JL. Utility of double-contrast multidetector CT scans to assess cartilage thickness after tibial plafond fracture. *Orthop Res Rev*. 2009 Nov;2009(1):23–29. doi.org/10.2147/orr.s7387. PMID: 20634971; PMCID: PMC2903754.
29. Segal NA, **Anderson DD**, Iyer KS, Baker J, Torner JC, Lynch JA, Felson DT, Lewis CE, Brown TD. Baseline articular contact stress levels predict incident symptomatic knee osteoarthritis development in the MOST cohort *J Orthop Res*. 2009 Dec;27(12):1562–8. doi.org/10.1002/jor.20936. PMID: 19533741; PMCID: PMC2981407.
30. Masrouha KZ, **Anderson DD**, Thomas TP, Kuhl LL, Brown TD, Marsh JL. Acute articular fracture severity and chronic cartilage stress challenge as quantitative risk factors for post-traumatic osteoarthritis: Illustrative cases. *Iowa Orthop J*. 2010;30:47–54. PMID: 21045971; PMCID: PMC2958270.
31. **Anderson DD**, Iyer KS, Segal NA, Lynch JA, Brown TD. Implementation of discrete element analysis for subject-specific, population-wide investigations of habitual contact stress exposure. *J Appl Biomech*. 2010 May;26(2):215–23. doi.org/10.1123/jab.26.2.215. PMID: 20498493; PMCID: PMC2905528.
32. **Anderson DD**, Tochigi Y, Rudert MJ, Vaseenon T, Brown TD, Amendola A. Effect of implantation accuracy on ankle contact mechanics with a metallic focal resurfacing implant. *J Bone Joint Surg Am*. 2010 Jun;92(6):1490–1500. doi.org/10.2106/JBJS.I.00431. PMID: 20516325; PMCID: PMC2874671.
33. Marsh JL, McKinley TO, Dirschl DR, Pick AG, Haft G, **Anderson DD**, Brown TD. The sequential recovery of health status after tibial plafond fracture. *J Orthop Trauma*. 2010 Aug;24(8):499–504. doi.org/10.1097/BOT.0b013e3181c8ad52. PMID: 20657260; PMCID: PMC3160734.
34. Yin Y, Zhang X, Williams R, Wu X, **Anderson DD**, Sonka M. LOGISMOS—Layered Optimal Graph Image Segmentation of Multiple Objects and Surfaces: Cartilage segmentation in the knee joint. *IEEE Trans Med Imaging*. 2010 Dec;29(12):2023–37. doi.org/10.1109/TMI.2010.2058861. PMID: 20643602; PMCID: PMC3131162.
35. Thomas TP, **Anderson DD**, Mosqueda TV, Van Hofwegen CJ, Hillis SL, Marsh JL, Brown TD. Objective CT-based metrics of articular fracture severity to assess risk for post-traumatic osteoarthritis. *J Orthop Trauma*. 2010 Dec;24(12):764–9. doi.org/10.1097/BOT.0b013e3181d7a0aa. PMID: 21076249; PMCID: PMC3179662.
36. **Anderson DD**, Van Hofwegen CJ, Marsh JL, Brown TD. Is elevated contact stress predictive of post-traumatic osteoarthritis for imprecisely reduced tibial plafond fractures? *J Orthop Res*. 2011 Jan;29(1):33–9. doi.org/10.1002/jor.21202. PMID: 20607840; PMCID: PMC2972368.
37. **Anderson DD**, Marsh JL, Brown TD. OREF 2011 Clinical Research Award: The pathomechanical etiology of post-traumatic osteoarthritis following intra-articular fractures. *Iowa Orthop J*. 2011;31:1–20. PMID: 22096414; PMCID: PMC3215107.
38. Thomas TP, **Anderson DD**, Willis AR, Liu P, Marsh JL, Brown TD. ASB Clinical Biomechanics Award Paper 2010: Virtual pre-operative reconstruction planning for comminuted articular fractures. *Clin Biomech (Bristol, Avon)*. 2011 Feb;26(2):109–115. doi.org/10.1016/j.clinbiomech.2010.12.008. PMID: 21215501; PMCID: PMC3034816.
39. Thomas TP, **Anderson DD**, Willis AR, Liu P, Frank MC, Marsh JL, Brown TD. A computational/experimental platform for investigating three-dimensional puzzle solving of comminuted articular fractures. *Comput Methods Biomech Biomed Engin*. 2011 Mar;14(3):263–270. doi.org/10.1080/10255841003762042. PMID: 20924863; PMCID: PMC3045471.
40. **Anderson DD**, Chubinskaya S, Guilak F, Martin JA, Oegema TR, Olson SA, Buckwalter JA. Post-traumatic osteoarthritis: Improved understanding and opportunities for early intervention. *J Orthop Res*. 2011 Jun;29(6):802–809. doi.org/10.1002/jor.21359. Review. PMID: 21520254; PMCID: PMC3082940.
41. Intema F, Thomas TP, **Anderson DD**, Elkins JM, Brown TD, Amendola A, Lafeber FPJG, Saltzman CL. Subchondral bone remodeling is related to clinical improvement after joint distraction in the treatment of ankle

- osteoarthritis. *Osteoarthritis Cartilage*. 2011 Jun;19(6):668–675. doi.org/10.1016/j.joca.2011.02.005. PMID: 21324372; PMCID: PMC3097273.
42. **Anderson DD**, Thomas TP, Frank MC, Marsh JL, Brown TD. On the horizon from the ORS: Assessing and minimizing the adverse mechanical consequences of articular fractures to decrease the risk of posttraumatic osteoarthritis. *J Am Acad Orthop Surg*. 2011 Oct;19(10):644–7.
 43. Karam MD, Kho JY, Yehyawi TM, Ohrt GT, Thomas GW, Jonard B, **Anderson DD**, Marsh JL. Application of surgical skill simulation training and assessment in orthopaedic trauma. *Iowa Orthop J*. 2012;32:76–82. PMID: 23576925; PMCID: PMC3565418.
 44. Saltzman CL, Hillis SL, Stolley MP, **Anderson DD**, Amendola A. Motion versus fixed distraction of the joint in the treatment of ankle osteoarthritis: A prospective randomized controlled trial. *J Bone Joint Surg Am*. 2012 Jun;94(11):961–70. doi.org/10.2106/JBJS.K.00018. PMID: 22637202; PMCID: PMC3364029.
 45. Segal NA, Kern AM, **Anderson DD**, Niu J, Lynch JA, Guermazi A, Torner JC, Brown TD, Nevitt MC. Elevated tibiofemoral articular contact stress predicts risk for bone marrow lesions and cartilage damage at 30 months. *Osteoarthritis Cartilage*. 2012;20(10):1120–6. doi.org/10.1016/j.joca.2012.05.013. PMID: 22698440; PMCID: PMC3427397.
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134. Johnson JE, Clarke GA, de Cesar Netto C, **Anderson DD**. Influence of sidewall retention and interference fit in total ankle replacement on implant-bone micromotion: A finite element study. *J Orthop Res.* 2024;1-9. doi:10.1002/jor.25796. PMID: 38327023

Book Chapters

1. **Anderson DD.** (1999) Orthopaedic Biomechanics. In Baratz, Watson, Imbriglia (Eds.) *Orthopaedic Surgery: The Essentials*, (pp. 3–11), New York, NY: Thieme Medical Publishers, Inc.
2. **Anderson DD**, Adams DJ, Hale JE. (2000) Mechanical Effects of Forces Acting on Bone, Cartilage, Ligaments and Tendons. In Nigg, MacIntosh, Mester (Eds.) *Biomechanics and Biology of Movement*, (pp. 283–306). Champaign, IL: Human Kinetics.
3. **Anderson DD**, Goetz JE. (2014) Musculoskeletal Biomechanics. In Cannada LK (Ed.) *Orthopaedic Knowledge Update 11*, (pp. 49–59). Rosemont, IL: American Academy of Orthopaedic Surgeons.

4. **Anderson DD**, Marsh JL. (2015) Measurement of Severity of Injury after Articular Fracture and Correlation with Post-Traumatic Arthritis Development. In Olson S and Guilak F (Ed.) *Post-Traumatic Arthritis: Pathogenesis, Diagnosis, and Management*, (pp. 305–315). New York, NY: Springer Science and Business Media.
5. Bottlang M, Fitzpatrick D, Claes L, **Anderson DD**. (2019) Biomechanics of Fractures and Fracture Fixation. In Tornetta III P, Ricci WM, Ostrum RF, McQueen MM, McKee MD, Court-Brown CM (Eds.) *Rockwood and Green's Fractures in Adults, 9th Edition*, (pp. 1–42). Philadelphia, PA: Lippincott Williams & Wilkins.
6. **Anderson DD**, Martin JA, Marsh JL, Goetz JE, Coleman MC, McKinley TO, Buckwalter JA. (2022) Early OA Following Synovial Joint Fracture. In Lattermann C, Madry H, Nakamura N, Kon E (Eds.) *Early Osteoarthritis*, (pp. 103–119). Cham, Switzerland: Springer Nature Switzerland AG. ISBN 978-3-030-79484-2. doi: 10.1007/978-3-030-79485-9.
7. **Anderson DD**, Wilken J, Brockett C, Redmond A. (2023) Predicting and Preventing Posttraumatic Osteoarthritis of the Ankle. In Ledoux W and Telfer S (Eds.) *Foot and Ankle Biomechanics*, (pp. 397-410). London, United Kingdom: Academic Press, Elsevier.

Conference Abstracts / Invited Presentations

1. Nelson BH, **Anderson DD**, Brand RA, Brown TD. The effect of condylar defects on articular contact pressures. Proc. 11th ASB, 79–80, 1987.
2. Brown TD, **Anderson DD**, Nepola JV, Singerman RJ, Pedersen DR, Brand RA. Contact stress aberrations following imprecise reduction of intra-articular fractures. Trans. 33rd ORS, 12:123, 1987.
3. **Anderson DD**, Brown TD, Yang KH, Radin EL. Juxtaarticular stress transients in a dynamically loaded joint. Proc. 12th ASB, 191–2, 1988.
4. **Anderson DD**, Brown TD, Yang KH, Radin EL. Juxtaarticular stress transients in a dynamically loaded joint. Trans. 34th ORS, 13:254, 1988.
5. **Anderson DD**, Brown TD, Yang KH, Radin EL. Dynamic finite element analysis of impulsive loading of the extension-splinted rabbit knee. J. Biomech., 23(7):711, 1990.
6. **Anderson DD**, Brown TD, Radin EL. Stress wave propagation through the impulsively loaded rabbit knee. Trans. 36th ORS, 15(2):506, 1990.
7. Bell AL, **Anderson DD**, Gaffney MB, Imbriglia JE. Contact stress distributions in malreduced intra-articular distal radius fractures. ASSH 9th Residents and Fellows Hand Surgical Conference, 1991.
8. Shelley FJ, **Anderson DD**, Kolar MJ, Miller MC, Rubash HE. A device to model the hip during stair climbing, including the extensor, abductor and adductor muscle groups. Advances in Bioengineering, 20:173–5, 1991.
9. **Anderson DD**, Bell AL, Gaffney MB, Imbriglia JE. Contact Stress Distributions in Malreduced Intra-articular Distal Radius Fracture. J Biomech., 25(6):685, 1992.
10. Baratz M, **Anderson D**, Ralston J, Imbriglia J. The relationship of CT-apparent density to pin pull-out strength in the human cadaver radius. American Society for Surgery of the Hand, 1992.
11. Loebig T, **Anderson D**, Baratz M, Imbriglia J. A biomechanical study of the radial-sided stabilizers of the thumb MCP joint. American Association for Hand Surgery, 1992.
12. Baratz M, **Anderson D**, Ralston J, Imbriglia J. The relationship of CT-apparent density to pin pull-out strength in the human cadaver radius. American Association for Hand Surgery, 1992.
13. Brown TD, Hale JE, Rudert MJ, **Anderson DD**, Pope DF, Huber-Betzer H, Mohler CG, Caldwell NJ, Brand RA. Biomechanics of local articular incongruities. 1992 International Symposium - Biomedical Engineering in the 21st Century, Taipei, Taiwan, R.O.C., 1992.
14. **Anderson DD**, Des Jardins JD, Mutschler TA, Ferguson GM. Radiographic evaluation of acetabular orientation in total hip arthroplasty. Surgery of the Pelvis and Acetabulum: An International Consensus, October, 1992.
15. Baratz ME, **Anderson DD**, Ralston JL, Imbriglia JE. The relationship of CT-apparent density to pin pull-out strength in the human cadaver radius. Radiologic Society of North America, December, 1992.
16. Baratz M, Des Jardins J, Anderson D, Imbriglia J. Contact stresses in the distal radius following displaced fractures of the lunate fossa. American Society for Surgery of the Hand, 1993.

17. Loebig TG, **Anderson DD**, Baratz ME, Herron M, Zoppi A, Imbriglia JE. A biomechanical study of the radial-sided stabilizers of the thumb MCP joint. J. Biomech., 26(3):344, 1993.
18. Baratz ME, Spaeder JA, Lam G, Ralston JL, **Anderson DD**, Imbriglia JE. The relationship of CT-apparent density to pin pull-out strength in the human cadaver radius. J. Biomech., 26(3):288, 1993.
19. Loebig TG, **Anderson DD**, Baratz ME, Imbriglia JE. A biomechanical study of the radial-sided stabilizers of the thumb MCP joint. Trans. 39th ORS, 18(1):116, 1993.
20. Baratz ME, Des Jardins JD, **Anderson DD**, Imbriglia JE. Displaced fractures of the distal radius: The effect of joint surface incongruities on intra-articular contact stresses. Trans. 39th ORS, 18(1):106, 1993.
21. Loebig TG, **Anderson DD**, Baratz ME, Imbriglia JE. A biomechanical study of the radial-sided stabilizers of the thumb MCP joint. 1993 ASME Summer Bioengineering Conference, 24:197–203, 1993.
22. **Anderson DD**. A finite element analysis of the radiocarpal joint. 2nd World Congress of Biomechanics, July, 1994.
23. Des Jardins JD, Daniel TE, Baratz ME, **Anderson DD**, Imbriglia, JE. Changes in carpal kinematics with displaced intra-articular fractures of the distal radius. 2nd World Congress of Biomechanics, July, 1994.
24. Daniel T, Des Jardins J, **Anderson D**, Baratz M. Carpal kinematics in displaced “die-punch” fractures of the distal radius. American Society for Surgery of the Hand, 1994.
25. Des Jardins JD, Baratz ME, **Anderson DD**, Imbriglia JE. The quantification of intra-articular contact stresses in displaced fractures of the distal radius. J. Biomech., 27(5):600, 1994.
26. **Anderson DD**. A finite element analysis of the radiocarpal joint. J. Biomech., 27(5):606, 1994.
27. Des Jardins JD, Daniel TE, **Anderson DD**, Baratz ME, Imbriglia JE. Changes in carpal kinematics with displaced intra-articular fractures of the distal radius. Advances in Bioengineering - 1994, 28:357–358, 1994.
28. Daniel TE, Miller PL, **Anderson DD**, Richman JD. Application of axial torsional and sagittal bending loads in in vitro spine testing. Advances in Bioengineering - 1994, 28:93–94, 1994.
29. **Anderson DD**, Mutschler TA, Jones SA. Bending rigidity along the human femur and its implications in femoral component design. 1995 ASME Bioengineering Conference, 29:563–564, 1995.
30. Daniel TE, **Anderson DD**. A generic three-dimensional finite element model of articular contact. 1995 ASME Bioengineering Conference, 29:143–144, 1995.
31. Baratz ME, Daniel TE, Des Jardins JD, **Anderson DD**, Wroblewski A. Changes in wrist mechanics resulting from displaced intra-articular fractures of the distal radius. 62nd Annual Meeting of the AAOS, February, 1995.
32. Daniel TE, Des Jardins JD, Baratz ME, **Anderson DD**, Imbriglia JE. Carpal kinematics in a displaced lunate fossa fracture. 2nd Triennial International Hand and Wrist Biomechanics Symposium, September, 1995.
33. **Anderson DD**, Daniel TE. A finite element analysis of the radiocarpal joint. 2nd Triennial International Hand and Wrist Biomechanics Symposium, September, 1995.
34. Badia A, Loebig T, Baratz ME, **Anderson D**. A correlation of wrist ligamentotaxis and carpal distraction with progressive wrist distraction. American Association for Hand Surgery, 1996.
35. Loebig TG, Badia A, Baratz ME, **Anderson DD**. Correlation of wrist ligamentotaxis with carpal distraction during external fixation. Advances in Bioengineering - 1996, 31:511–2, 1996.
36. Klein RR, Loebig TG, **Anderson DD**, Mutschler TA, Ferguson GM. The effect of acetabular component orientation on load transfer through the cadaver pelvis. Advances in Bioengineering - 1996, 31:117–8, 1996.
37. Daniel TE, Baratz ME, **Anderson DD**, Imbriglia JE. A technique for assessing thumb motion following carpometacarpal arthroplasty. Trans 43rd ORS, 22:660, 1997.
38. Kurtz C, **Anderson DD**, Loebig TG, DeMeo PJ, Campbell PG. IGF-I accelerates functional recovery from rat achilles tendon injury without compromising healed tendon biomechanical properties. Trans 43rd ORS, 22:2, 1997.
39. Daniel TE, Baratz ME, **Anderson DD**. An in vivo technique for measuring thumb motion. 1997 ASME Bioengineering Conference, BED-35:399–400, 1997.
40. Loebig TG, **Anderson DD**. Rapid prototype modeling for three-dimensional photoelastic stress analysis in orthopaedics. 1997 ASME Bioengineering Conference, BED-35:389–90, 1997.

41. Deshpande BR, Daniel TE, **Anderson DD**. A three-dimensional contact-coupled finite element model of the radiocarpal joint. 1997 ASME Bioengineering Conference, BED-35:325–6, 1997.
42. Daniel TE, **Anderson DD**. Finite element simulation of displaced intra-articular distal radius fractures. 1997 ASME Bioengineering Conference, BED-35:321–2, 1997.
43. Loebig TG, **Anderson DD**. Comparison of three-dimensional photoelastic stress measurement to strain gage analysis in a human cadaver femur. Proc. 21st ASB Conference, 21:53–4, 1997.
44. Deshpande BR, Daniel TE, **Anderson DD**. A three-dimensional finite element contact model of the radiocarpal joint: Fracture step-off and stress transfer across the joint. 3rd Triennial International Hand and Wrist Biomechanics Symposium, September, 1998.
45. Hale JE, **Anderson DD**, Johnson GA. Characterization of a polyurethane foam model for testing stainless steel suture pull-through in bone. 1999 ASME Bioengineering Conference, BED-42:583–4, 1999.
46. Klein TJ, Ebeling PB, **Anderson DD**, Buss DD. Mechanically favorable adaptive bone remodeling in rotator cuff arthropathy patients with good function. 1999 ASME Bioengineering Conference, BED-42:473–4, 1999.
47. Klein TJ, Ebeling PB, **Anderson DD**, Buss DD. Mechanically favorable adaptive bone remodeling in rotator cuff arthropathy patients with good function. 2nd Conference of the International Shoulder Group, August 1999.
48. Magovern JA, Johnson GA, Hale JE, **Anderson DD**. Mechanical testing of a new method for reinforced sternal closure. 13th Annual Meeting of the European Association for Cardio-Thoracic Surgery, Sept 5–8, 1999.
49. Hale JE, **Anderson DD**, Johnson GA, Magovern JA. An assessment of the pull-through strength and fatigue properties of a new sternal closure technique. Proc. 23rd ASB Conference, 23:86–7, 1999.
50. Hale JE, **Anderson DD**, Johnson GA. A polyurethane foam model for characterizing suture pull-through properties in bone. Proc. 23rd ASB Conference, 23:288–9, 1999.
51. Klein TJ, Ebeling PB, **Anderson DD**, Buss DD. Mechanically favorable bone remodeling in rotator cuff arthropathy patients with good function. Proc. 23rd ASB Conference, 23:138–9, 1999.
52. **Anderson DD**, Klein TJ, Ebeling PB, Buss DD. Adaptive bone remodeling in rotator cuff arthropathy. 46th Annual Meeting of the Orthopaedic Research Society, March 11–18, 2000.
53. **Anderson DD**, Kurtz CA, Loebig T, DeMeo PJ, Campbell PG. The potential of a single application of insulin-like growth factor-I to improve functional recovery from Achilles tendon injury in the rat. Pittsburgh Orthopaedic Tissue Engineering Symposium, April 16–19, 2000.
54. Ludewig PM, **Anderson DD**, and Guanache CA. Preliminary evaluation of a shoulder capsular stretching brace for adhesive capsulitis. Proc. 24th ASB Conference, 24:35–6, 2000.
55. Hale JE, Panek TJ, Guanache CA, **Anderson DD**, Buss DD. Cement penetration associated with pressurization of the glenoid in total shoulder arthroplasty. Proc. 24th ASB Conference, 24:107–8, 2000.
56. Klein TJ, Ebeling PB, **Anderson DD**, Buss DD. Mechanically favorable adaptive bone remodeling in rotator cuff arthropathy patients with good function. Clin. Biomech., 15(Suppl #1):S50–1, 2000.
57. Kurtz C, **Anderson D**, Campbell P, DeMeo PJ. Insulin-like growth factor-I treatment yields functional results comparable to tendon repair. 6th Annual Congress of the European College of Sports Science, July 24–28, 2001.
58. **Anderson DD**. Kinetic analyses of ligamentous function in the human knee: Techniques and research findings. 6th Annual Congress of the European College of Sports Science, July 24–28, 2001.
59. Panek TJ, Hale JE, Guanache CA, **Anderson DD**, Freehill MQ, Buss DD. Pressurization of the glenoid to increase cement penetration in total shoulder arthroplasty. 69th Annual Meeting of the AAOS, February 2002.
60. Stangier SD, Hale JE, **Anderson DD**. Dynamic testing of rat achilles tendon. IV World Congress of Biomechanics, 2002.
61. Vogelpohl L, **Anderson DD**, Hale JE, Stangier SD, Guanache CA. Increasing age slows recovery of function following achilles tendon injury in the rat. IV World Congress of Biomechanics, 2002.
62. **Anderson DD**, Beardsley CL, Marsh JL, Brown TD. Quantifying fracture energy in order to predict post-traumatic osteoarthritis. 27th Annual Meeting of the American Society of Biomechanics, 2003.

63. **Anderson DD**, Beardsley CL, Marsh JL, Brown TD. Quantifying fracture energy to score injury severity in tibial pilon fractures. 50th Annual Meeting of the Orthopaedic Research Society, San Francisco, California. Abstract #488, March 7–10, 2004.
64. **Anderson DD**, Mente PL. Moderator Session 24: Cartilage mechanics. 50th Annual Meeting of the Orthopaedic Research Society, San Francisco, California, March 8, 2004.
65. **Anderson DD**, Muehling VL, Marsh JL, Brown TD. Quantifying bone fracture energy for grading of injury severity. Roy J. and Lucille A. Carver College of Medicine/College of Public Health/VA Medical Center Research Week 2004, Iowa City, Iowa. Abstract #8387, March 30–April 1, 2004.
66. **Anderson DD**, Beardsley CL, Marsh JL, Brown TD. Quantifying fracture energy as a predictor of post-traumatic osteoarthritis. 22nd Annual Meeting of The Mid-America Orthopaedic Association, La Quinta, California. April 14–18, 2004.
67. Marsh JL, Muehling VL, **Anderson DD**, Brown TD, McKinley TO. Does articular cartilage survive high energy fractures? 9th International Society for Fracture Repair, Bologna, Italy, Abstract #S30, November 2–11, 2004.
68. **Anderson DD**. Mechanical determinants of post-traumatic osteoarthritis. Current Topics in Orthopaedic Research, Minneapolis, Minnesota, November 13, 2004.
69. **Anderson DD**, Muehling VL, Marsh JL, Brown TD. Quantifying fracture energy in a clinical series of tibial pilon fracture cases. Proceedings of the 28th Annual Meeting of the American Society of Biomechanics, p.100, September 8–11, 2004, Portland, Oregon.
70. **Anderson DD**, Grosland NM, Brown TD. Investigating chronic stress exposure following intra-articular fracture using a finite element model of the ankle. Proceedings of the 28th Annual Meeting of the American Society of Biomechanics, p. 252, Portland, Oregon, September 8–11, 2004.
71. **Anderson DD**, Beardsley CL, Marsh JL, Brown TD. Fracture energy determination incorporating local bone densities from CT scans. 5th Combined Meeting of the Orthopaedic Research Societies of the U.S.A., Canada, Japan and Europe, Paper #027, Banff, Alberta, Canada, October 10, 2004.
72. **Anderson DD**, Muehling VL, Marsh JL, Brown TD. Energy measures agree with clinical injury severity scoring in comminuted intra-articular tibial pilon fractures. 5th Combined Meeting of the Orthopaedic Research Societies of the U.S.A., Canada, Japan and Europe, Paper #058, Banff, Alberta, Canada, October 10–13, 2004.
73. **Anderson DD**, Grosland NM, Brown TD. Investigating chronic stress exposure following intra-articular fracture using a finite element model of the ankle. 5th Combined Meeting of the Orthopaedic Research Societies of the U.S.A., Canada, Japan and Europe, Paper #277, Banff, Alberta, Canada, October 10–13, 2004.
74. **Anderson DD**, Grosland NM, Brown TD. Investigating chronic aberrant stress exposure following intra-articular fracture as a predictor of post-traumatic osteoarthritis. 9th World Congress of the Osteoarthritis Research Society International, Paper #199, Chicago, Illinois, December 2–5, 2004.
75. **Anderson DD**, Muehling VL, Marsh JL, Brown TD. Fracture energy as a predictor of post-traumatic OA: Energy measures agree with clinical injury severity scoring in comminuted intra-articular fractures. 9th World Congress of the Osteoarthritis Research Society International, Paper #284, Chicago, Illinois, December 2–5, 2004.
76. **Anderson DD**. An introduction to the Orthopaedic Biomechanics Laboratory: At the intersection of pocket protectors and boneheads. University of Iowa Program in Public Health Genetics Seminar, April 5, 2005.
77. **Anderson DD**, Goldsworthy JK, Shivanna K, Grosland NM, Pedersen DR, Thomas TP, Tochigi Y, Marsh JL, Brown TD. Patient-specific finite element analysis of intra-articular chronic stress exposure of the ankle during stance phase of gait. 10th International Symposium on Computer Simulation in Biomechanics (ISCSB - 2005), Cleveland, Ohio, July 28–July 30, 2005.
78. Thomas TP, **Anderson DD**, Hermanson E, Muehling VL, Marsh JL, Brown TD. Relating fracture energy to clinical outcome in tibial pilon fracture cases. XXth Congress of the International Society of Biomechanics and 29th Annual Meeting of the American Society of Biomechanics, Orthopaedics: Paper #107, Cleveland, Ohio, July 31–August 5, 2005.
79. Goldsworthy JK, **Anderson DD**, Shivanna K, Grosland NM, Pedersen DR, Thomas TP, Tochigi Y, Marsh JL, Brown TD: Patient-specific computer modeling of degeneration propensity due to aberrant contact stress exposure following intra-articular fracture of the ankle. 10th World Congress on Osteoarthritis, Paper #P159, Boston, Massachusetts, December 8–11, 2005.

80. Goldsworthy JK, **Anderson DD**, Rudert MJ, Tochigi Y, Pedersen DR, Brown TD. Validation of a patient-specific finite element model of the ankle. 14th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Chicago, Illinois, March 18, 2006.
81. Goldsworthy JK, **Anderson DD**, Shivanna K, Grosland NM, Pedersen DR, Thomas TP, Tochigi Y, Marsh JL, Brown TD. Patient-specific modeling of degeneration propensity following intra-articular fracture of the ankle. 52rd Annual Meeting of the Orthopaedic Research Society, Paper #205, Chicago, Illinois, March 19–22, 2006.
82. Goldsworthy JK, **Anderson DD**, Pedersen DR, Tochigi Y, Brown TD. Achieving anatomically-correct rotation in patient-specific computer modeling of the ankle joint. 52rd Annual Meeting of the Orthopaedic Research Society, Paper #1893, Chicago, Illinois, March 19–22, 2006.
83. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. Predicting distal tibia surface area using normalized bone lengths. 52rd Annual Meeting of the Orthopaedic Research Society, Paper #1896, Chicago, Illinois, March 19–22, 2006.
84. Goldsworthy JK, **Anderson DD**, Rudert MJ, Tochigi Y, Pedersen DR, Brown TD. Validation of a patient-specific finite element model of the ankle. 2006 Midwest Graduate Student Biomechanics Symposium (MWGSBS), Podium, Outstanding Research Award Winner, Milwaukee, Wisconsin, March 31–April 1, 2006.
85. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. Image analysis techniques for expedited fracture severity assessment. 2006 Midwest Graduate Student Biomechanics Symposium (MWGSBS), Podium, Outstanding Research Award Winner, Milwaukee, Wisconsin, March 31–April 1, 2006.
86. **Anderson DD**. Identifying bone fracture fragment morphology from CT scans: Prelude to 3-D puzzle solving. The University of North Carolina at Charlotte Electrical & Computer Engineering Department, July 11, 2006, Charlotte, North Carolina.
87. Elkins JM, **Anderson DD**, Stolley M, Brown TD, Amendola A, Saltzman CL. Subchondral bone density changes following joint distraction to treat ankle arthritis. Medical Scientist Training Program and Biosciences Program Research Rotation Talks, University of Iowa, August 14–15, 2006, Iowa City, Iowa.
88. **Anderson DD**, Millington SA, Li B, Brown TD. A digital template of cartilage thickness variation in the ankle. 30th Annual Meeting of the American Society of Biomechanics, Blacksburg, Virginia, September 6–9, 2006. Paper #289.
89. Goldsworthy JK, **Anderson DD**, Rudert MJ, Tochigi Y, Pedersen DR, Brown TD. Validation of a patient-specific finite element model of the ankle. 30th Annual Meeting of the American Society of Biomechanics, Blacksburg, Virginia, September 6–9, 2006. Paper #212. Selected as MicroStrain Award paper.
90. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. A new technique for expedited fracture severity assessment. 30th Annual Meeting of the American Society of Biomechanics, Blacksburg, Virginia, September 6–9, 2006. Paper #236.
91. Goldsworthy JK, **Anderson DD**, Thomas TP, Muehling VL, Marsh JL, Brown TD. Patient-specific modeling of increased contact stress exposure following intra-articular fracture of the ankle. OTA 22nd Annual Meeting, Phoenix, Arizona, October 5–7, 2006. Basic Science Forum Podium, OTA Poster.
92. Li B, Millington SA, **Anderson DD**, Acton ST. Registration of surfaces to 3D images using rigid body surfaces. Fortieth Annual Asilomar Conference on Signals, Systems, and Computers, October 29–November 1, 2006, Pacific Grove, California. Paper #1347.
93. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. Quantifying fragment dispersion in highly comminuted fractures. 15th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, February 10, 2007, University of California - San Diego, La Jolla, California.
94. **Anderson DD**, Thomas TP, Willis AR, Brown TD, Marsh JL. Identifying bone fracture fragment morphology for 3-D puzzle solving. 53rd Annual Meeting of the Orthopaedic Research Society, February 11–14, 2007, San Diego, California. Paper #77.
95. Elkins JM, **Anderson DD**, Stolley M, Brown TD, Amendola A, Saltzman CL. Subchondral bone density changes following joint distraction to treat ankle arthritis. 53rd Annual Meeting of the Orthopaedic Research Society, February 11–14, 2007, San Diego, California. Paper #1270.
96. Goldsworthy JK, **Anderson DD**, Thomas TP, Muehling VL, Marsh JL, Brown TD. Patient-specific modeling of increased contact stress exposure after intra-articular pilon fractures. 74th Annual Meeting of the American Academy of Orthopaedic Surgeons, February 14–18, 2007, San Diego, California.

97. Willis AR **Anderson DD**, Thomas TP, Brown TD, Marsh JL. 3D reconstruction of highly fragmented bone fractures. SPIE Medical Imaging, February 17–22, 2007, San Diego, California. Proc. SPIE 6512:65121P1–65121P10.
98. **Anderson DD**. Applications of Geomagic Studio® in orthopedic trauma research. Geomagic® User Conference, Convergence 2007. Research Triangle Park, NC February 20–23, 2007.
99. **Anderson DD**. Quantifying the severity of comminuted intra-articular fractures. Duke University Orthopaedic Bioengineering Laboratory, Durham, North Carolina, February 21, 2007.
100. Marsh JL, Goldsworthy JK, **Anderson DD**, Thomas TP, Muehling VL, Brown TD. Patient-specific modeling of increased contact stress exposure following intra-articular fracture of the ankle. 25th Annual Meeting of the Mid-America Orthopaedic Association, April 11–15, 2007, Boca Raton, Florida.
101. Marsh JL, **Anderson DD**, Thomas TP, Muehling VL, Brown TD, Mosqueda TV. Quantifying injury severity in tibial plafond fractures: Interfragmentary surface area agrees with clinical rank ordering. 25th Annual Meeting of the Mid-America Orthopaedic Association, April 11–15, 2007, Boca Raton, Florida.
102. **Anderson DD**. Mechanical determinants of post-traumatic osteoarthritis. (Lecture for 027:197 – Biomechanics of Human Motion) University of Iowa Department of Integrative Physiology, April 23, 2007, Iowa City, Iowa.
103. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. Displaced soft tissue volume as a metric of comminuted fracture severity. 31st Annual Meeting of the American Society of Biomechanics, August 22–25, 2007, Stanford, California. Paper #309.
104. **Anderson DD**, Segal NA, Torner JC, Brown TD. Biomechanical modeling to identify risk factors in knee OA: Model dependence upon source MRI field strength. 31st Annual Meeting of the American Society of Biomechanics, August 22–25, 2007, Stanford, California. Paper #201.
105. **Anderson DD**. The Use of CAD/CAM in orthopaedic trauma research. 084:251 - Clinical issues and treatment planning, University of Iowa Graduate Program in Prosthodontics. August 31, 2007, Iowa City, Iowa.
106. **Anderson DD**, Mosqueda TV, Thomas TP, Hermanson EL, Brown TD, Marsh JL. Quantifying tibial plafond fracture severity: Absorbed energy and fragment displacement agree with clinical rank ordering. Ruth Jackson Orthopaedic Society 8th Biennial Meeting, Kansas City, Missouri, October 5–7, 2007. Paper #12. Received the Kathryn Cramer Outstanding Clinical Paper Award.
107. Mosqueda TV, **Anderson DD**, Thomas TP, Pick AG, Brown TD, Marsh JL. Objective CT-based assessment of fracture severity. 23rd Annual Meeting of the Orthopaedic Trauma Association, October 17–18, 2007, Boston, Massachusetts, USA. Paper #890. Basic Science Focus Forum.
108. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. CT-Based method for measuring soft tissue damage in highly comminuted fractures. 23rd Annual Meeting of the Orthopaedic Trauma Association, October 17–18, 2007, Boston, Massachusetts, USA. Paper #882. Basic Science Focus Forum.
109. Marsh JL, McKinley TO, Dirschl DR, Pick AG, Haft G, **Anderson DD**, Brown TD. The sequential recovery of health status after tibial plafond fractures. 23rd Annual Meeting of the Orthopaedic Trauma Association, October 18–20, 2007, Boston, Massachusetts, USA. Paper #826.
110. Mosqueda TV, **Anderson DD**, Thomas TP, Pick AG, Brown TD, Marsh JL. Objective CT-based assessment of fracture severity. 23rd Annual Meeting of the Orthopaedic Trauma Association, October 18–20, 2007, Boston, Massachusetts, USA. Paper #890.
111. **Anderson DD**, Mosqueda TV, Thomas TP, Hermanson EL, Brown TD, Marsh JL. Quantifying tibial plafond fracture severity: Absorbed energy and fragment displacement agree with clinical rank ordering. 6th Combined Meeting of the Orthopaedic Research Societies, October 20–24, 2007, Honolulu, Hawaii. Paper #16.
112. **Anderson DD**, Li W, Goldsworthy JK, Brown TD, Marsh JL. Patient-specific study of chronic contact stress exposure after intra-articular fracture as a predictor of post-traumatic OA. OARSI World Congress on Osteoarthritis 2007, December 6–9, 2007, Ft. Lauderdale, Florida. Abstract 07-A-262-OARSI. Osteoarthritis Cartilage 2007;15(Suppl C):C82. [https://doi.org/10.1016/S1063-4584\(07\)61765-8](https://doi.org/10.1016/S1063-4584(07)61765-8)
113. **Anderson DD**, Thomas TP, Brown TD, Marsh JL. An expedited technique for quantifying joint injury severity to assess risk for post-traumatic OA. OARSI World Congress on Osteoarthritis 2007, December 6–9, 2007, Ft. Lauderdale, Florida. Abstract 07-A-298-OARSI. Osteoarthritis Cartilage 2007;15(Suppl C):C132. [https://doi.org/10.1016/S1063-4584\(07\)61865-2](https://doi.org/10.1016/S1063-4584(07)61865-2)

114. **Anderson DD**, Li W, Goldsworthy JK, Brown TD, Marsh JL. Chronic contact stress exposure as a predictor of post-traumatic OA after intra-articular fracture. 54th Annual Meeting of the Orthopaedic Research Society, March 2–5, 2008, San Francisco, California. Paper #727.
115. **Anderson DD**, Frank MC, McKinley TO, Brown TD. Fragment substitutes for anatomically-interfaced segmental bone defect repair. 54th Annual Meeting of the Orthopaedic Research Society, March 2–5, 2008, San Francisco, California. Paper #998.
116. **Anderson DD**, Thomas TP, Marsh JL, Brown TD. Probabilistic texture image-based characterization of heterotopic ossification. 54th Annual Meeting of the Orthopaedic Research Society, March 2–5, 2008, San Francisco, California. Paper #1656.
117. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. CT-based method for measuring soft tissue damage in highly comminuted fractures. 54th Annual Meeting of the Orthopaedic Research Society, March 2–5, 2008, San Francisco, California. Paper #1020.
118. Marsh JL, Mosqueda TV, **Anderson DD**, Thomas TP, Pick A, Brown TD. Objective CT-based assessment of fracture severity. 75th Annual Meeting of the American Academy of Orthopaedic Surgeons, March 5–9, 2008, San Francisco, California. Paper #143.
119. Marsh JL, McKinley TO, Dirschl DR, Pick AG, Haft G, **Anderson DD**, Brown TD. The sequential recovery of health status after tibial plafond fractures. 75th Annual Meeting of the American Academy of Orthopaedic Surgeons, March 5–9, 2008, San Francisco, California. AAOS Specialty Day Program.
120. Thomas TP, **Anderson DD**, Marsh JL, Brown TD. Quantifying articular fracture severity: Developing objective CT-based metrics to predict post-traumatic osteoarthritis. The University of Iowa College of Engineering Research Open House, April 10, 2008, Iowa City, Iowa.
121. Iyer KS, **Anderson DD**, Baker J, Torner J, Segal NA, Brown TD. Biomechanical modeling to predict those at risk of developing painful knee OA. The University of Iowa College of Engineering Research Open House, April 10, 2008, Iowa City, Iowa.
122. Brown TD, Li W, **Anderson DD**, Goldsworthy JL, Marsh JL. Habitual contact stress elevations in patients with ALIF-repaired tibial plafond fractures. Department of Orthopaedic Surgery, Massachusetts General Hospital, April 11, 2008, Boston, Massachusetts.
123. **Anderson DD**. An introduction to the Orthopaedic Biomechanics Laboratory: At the intersection of pocket protectors and boneheads. The Osher Lifelong Learning Institute at The University of Iowa Center on Aging: Wednesday Night at the Lab, July 9, 2008, Iowa City, Iowa.
124. Frank MC, Hunt CV, **Anderson DD**, McKinley TO, Brown TD. Rapid manufacturing in biomedical materials: Using subtractive rapid prototyping for bone replacement. 19th Annual International Solid Freeform Fabrication Symposium, August 4–6, 2008, Austin, Texas.
125. Iyer KS, **Anderson DD**, Baker J, Torner JC, Brown TD, Segal NA. Biomechanical modeling to predict the risk of developing painful knee OA. The North American Congress on Biomechanics (NACOB 2008), August 5–9, 2008, Ann Arbor, Michigan. Paper #130.
126. Thomas TP, Van Hofwegen C, **Anderson DD**, Marsh JL, Brown TD. Elucidating the relationship between residual incongruities, elevated contact stresses, and cartilage degeneration in fractures of the tibial plafond. The North American Congress on Biomechanics (NACOB 2008), August 5–9, 2008, Ann Arbor, Michigan. Paper #134.
127. Segal NA, **Anderson DD**, Iyer KS, Baker J, Torner JC, Brown TD. Baseline articular contact stress is predictive of incident symptomatic knee osteoarthritis in the MOST study. OARSI World Congress on Osteoarthritis 2008, September 18–21, 2008, Rome, Italy. Abstract 07-A-73-OARSI. *Osteoarthritis Cartilage* 2008;16(Supp 4):S64–65. [https://doi.org/10.1016/S1063-4584\(08\)60166-1](https://doi.org/10.1016/S1063-4584(08)60166-1)
128. Thomas TP, **Anderson DD**, Van Hofwegen CJ, Brown TD, Marsh JL. A pathomechanical study of post-traumatic osteoarthritis: Linking intra-articular fracture incongruity to cartilage degeneration. OARSI World Congress on Osteoarthritis 2008, September 18–21, 2008, Rome, Italy. Abstract 07-A-276-OARSI. *Osteoarthritis Cartilage* 2008;16(Supp 4):S119–120. [https://doi.org/10.1016/S1063-4584\(09\)60169-2](https://doi.org/10.1016/S1063-4584(09)60169-2)
129. Thomas TP, **Anderson DD**, Mosqueda TV, Van Hofwegen CJ, Brown TD, Marsh JL. Relating objective CT-based metrics of fracture severity to the incidence of post-traumatic osteoarthritis. OARSI World Congress on

- Osteoarthritis 2008, September 18–21, 2008, Rome, Italy. Abstract 07-A-360-OARSI. *Osteoarthritis Cartilage* 2008;16(Supp 4):S122. [https://doi.org/10.1016/S1063-4584\(08\)60314-3](https://doi.org/10.1016/S1063-4584(08)60314-3)
130. Tochigi Y, Rudert MJ, **Anderson DD**, Brown TD, Amendola A. Contact stresses in the human ankle with a focal resurfacing implant. OARSI World Congress on Osteoarthritis 2008, September 18–21, 2008, Rome, Italy. Abstract 07-A-500-OARSI. *Osteoarthritis Cartilage* 2008;16(Supp 4):S236. [https://doi.org/10.1016/S1063-4584\(08\)60597-X](https://doi.org/10.1016/S1063-4584(08)60597-X)
 131. **Anderson DD**, Li W, Van Hofwegen C, Marsh JL, Brown TD. Predicting post-traumatic osteoarthritis in tibial plafond fractures based upon elevated contact stress exposure. Orthopaedic Trauma Association's Basic Science Focus Forum, October 15–16, 2008, Denver, Colorado. Paper #763. (Best paper, OTA Basic Science Focus Forum.)
 132. Thomas TP, Van Hofwegen C, **Anderson DD**, Marsh JL, Brown TD. Elucidating the relationship between residual incongruities, elevated contact stresses, and cartilage degeneration in a clinical series of tibial plafond fractures. Orthopaedic Trauma Association's Basic Science Focus Forum, October 15–16, 2008, Denver, Colorado. Paper #768.
 133. Thomas TP, **Anderson DD**, Mosqueda TV, Van Hofwegen C, Marsh JL, Brown TD. Objective CT-based assessment of fracture severity: Prediction of post-traumatic osteoarthritis in tibial plafond fractures. 24th Annual Meeting of the Orthopaedic Trauma Association, Denver, Colorado, October 15–18, 2008. Paper #333.
 134. Yin Y, Zhang X, **Anderson DD**, Brown TD, Van Hofwegen C, Sonka M. Simultaneous segmentation of the bone and cartilage surfaces of a knee joint in 3D. SPIE Medical Imaging, February 7–12, 2009, Lake Buena Vista, Florida. Paper #7259-59. Proc. of SPIE 2009;7259:72591O1–72591O-9.
 135. Zhou B, Willis AR, Sui Y, **Anderson DD**, Thomas TP, Brown TD. Improving inter-fragmentary alignment for virtual 3D reconstruction of highly fragmented bone fractures. SPIE Medical Imaging, February 7–12, 2009, Lake Buena Vista, Florida. Paper #7259-115. Proc. of SPIE 2009;7259: 725934-1–725934-9.
 136. **Anderson DD**, Li W, Van Hofwegen C, Brown TD. Post-traumatic OA in tibial plafond fractures follows elevated contact stress exposure. 55th Annual Meeting of the Orthopaedic Research Society, February 22–25, 2009, Las Vegas, Nevada. Paper #803.
 137. **Anderson DD**, Iyer KS, Baker J, Torner JC, Brown TD, Segal NA. Habitual cartilage contact stress predicts the risk of developing painful knee OA. 55th Annual Meeting of the Orthopaedic Research Society, February 22–25, 2009, Las Vegas, Nevada. Paper #1166.
 138. Frank MC, Hunt CV, **Anderson DD**, McKinley TO, Brown TD. Maintenance of surface porosity when using subtractive rapid prototyping for bone replacement. 55th Annual Meeting of the Orthopaedic Research Society, February 22–25, 2009, Las Vegas, Nevada. Paper #801.
 139. Thomas TP, **Anderson DD**, Willis AR, Marsh JL, Brown TD. A development platform for three-dimensional puzzle solving of comminuted articular fractures. 55th Annual Meeting of the Orthopaedic Research Society, February 22–25, 2009, Las Vegas, Nevada. Paper #802.
 140. Thomas TP, **Anderson DD**, Van Hofwegen C, Marsh JL, Brown TD. Predicting post-traumatic OA based upon objective CT-based measures of articular fracture severity. 55th Annual Meeting of the Orthopaedic Research Society, February 22–25, 2009, Las Vegas, Nevada. Paper #804.
 141. Thomas TP, **Anderson DD**, Van Hofwegen C, Marsh JL, Brown TD. Long-term effects of residual incongruities following intra-articular fractures: Spatial correlation between elevated contact stress and cartilage degeneration. 55th Annual Meeting of the Orthopaedic Research Society, February 22–25, 2009, Las Vegas, Nevada. Paper #387.
 142. Tochigi Y, **Anderson DD**, Rudert MJ, Vaseenon T, Brown TD, Amendola A. Effect of implantation height upon contact stresses in the human ankle with a focal resurfacing implant. 55th Annual Meeting of the Orthopaedic Research Society, February 22–25, 2009, Las Vegas, Nevada. Paper #109.
 143. Yin Y, Zhang X, **Anderson DD**, Brown TD, Van Hofwegen C, Sonka M. Performance of a novel framework for simultaneous segmentation of bone and cartilage surfaces of the knee. 55th Annual Meeting of the Orthopaedic Research Society, February 22–25, 2009, Las Vegas, Nevada. Paper #244.
 144. Van Hofwegen C, Thomas TP, **Anderson DD**, Marsh JL, Brown TD. Elevated contact stress from residual incongruities predicts cartilage thinning in plafond fractures. 76th Annual Meeting of the American Academy of Orthopaedic Surgeons, February 25–28, 2009, Las Vegas, Nevada. Paper #360.

145. Thomas TP, Mosqueda T, **Anderson DD**, Van Hofwegen C, Brown TD, Marsh JL. Predicting outcomes of tibial plafond fractures from CT-based measures of acute fracture severity. 76th Annual Meeting of the American Academy of Orthopaedic Surgeons, February 25–28, 2009, Las Vegas, Nevada. Paper #489.
146. **Anderson DD**, Li W, Van Hofwegen C, Marsh JL, Brown TD. Predicting post-traumatic osteoarthritis in tibial plafond fractures based upon elevated contact stress exposure. 76th Annual Meeting of the American Academy of Orthopaedic Surgeons, Orthopaedic Trauma Association Specialty Day, February 28, 2009, Las Vegas, Nevada.
147. Iyer KS, **Anderson DD**, Baker J, Segal NA, Torner JC, Brown TD. Biomechanical modeling to predict those at risk of developing painful knee OA. Iowa Orthopaedic Society Spring Meeting, April 17, 2009, Des Moines, Iowa. (2009 Michael Bonfiglio Award for Student Research in Orthopaedic Surgery)
148. **Anderson DD**, Tochigi Y, Rudert MJ, Vaseenon T, Brown TD, Amendola A. Ankle contact mechanics following focal defect resurfacing with a metallic implant. 25th Annual Summer Meeting of the American Orthopaedic Foot & Ankle Society, July 15–18, 2009, Vancouver, BC, Canada. Paper #851.
149. **Anderson DD**, Tochigi Y, Rudert MJ, Vaseenon T, Amendola A, Brown TD. Computational simulation of ankle contact mechanics following focal defect resurfacing with a metallic implant. 33rd Annual Meeting of the American Society of Biomechanics, August 26–29, 2009, State College, Pennsylvania. Paper #1038.
150. **Anderson DD**, Iyer KS, Segal NA, Brown TD. Meniscal modeling in a discrete element analysis of the knee. 33rd Annual Meeting of the American Society of Biomechanics, August 26–29, 2009, State College, Pennsylvania. Paper #1051.
151. Thomas TP, **Anderson DD**, Willis AR, Brown TD, Marsh JL. Semi-automatic 3D virtual reconstruction of simulated comminuted articular fractures. 33rd Annual Meeting of the American Society of Biomechanics, August 26–29, 2009, State College, Pennsylvania. Paper #1045.
152. **Anderson DD**, Tochigi Y, Rudert MJ, Vaseenon T, Amendola A, Brown TD. Ankle contact mechanics following focal defect resurfacing with a metallic implant: A computational investigation. OARSI World Congress on Osteoarthritis 2009, September 10–13, 2009, Montreal, Quebec, Canada. Abstract Control #252. *Osteoarthritis Cartilage* 2009;17(Supp 1):S88–89. [https://doi.org/10.1016/S1063-4584\(09\)60169-2](https://doi.org/10.1016/S1063-4584(09)60169-2)
153. Intema F, Thomas TP, **Anderson DD**, Elkins JM, Lafeber FPJG, Brown TD, Amendola A, Saltzman CL. Subchondral bone density changes may partly explain the clinical benefit of joint distraction in treatment of advanced ankle OA. OARSI World Congress on Osteoarthritis 2009, September 10–13, 2009, Montreal, Quebec, Canada. Abstract Control #479. *Osteoarthritis Cartilage*. 2009;17(Supp 1):S31–32. [https://doi.org/10.1016/S1063-4584\(09\)60065-0](https://doi.org/10.1016/S1063-4584(09)60065-0)
154. Van Hofwegen C, Thomas TP, **Anderson DD**, Brown TD, Marsh JL. Cartilage changes in the development of post-traumatic OA, as assessed by double-contrast, multi-detector CT. OARSI World Congress on Osteoarthritis 2009, September 10–13, 2009, Montreal, Quebec, Canada. Abstract Control #442. *Osteoarthritis Cartilage*. 2009;17(Supp 1):S228–229. [https://doi.org/10.1016/S1063-4584\(09\)60450-7](https://doi.org/10.1016/S1063-4584(09)60450-7)
155. **Anderson DD**. Mechanical factors in the development of arthritis following articular joint fractures. Des Moines University Friday Seminar Series, September 25, 2009, Des Moines, Iowa.
156. Zhou B, Willis AR, Sui Y, **Anderson DD**, Thomas TP, Brown TD. Virtual 3D bone fracture reconstruction via inter-fragmentary surface alignment. IEEE International Workshop on 3-D Digital Imaging and Modeling (3DIM2009). Kyoto, Japan. October 3–4, 2009.
157. **Anderson DD**, Michalson JL, Dirschl DR, DeCoster TA, Brown TD, Marsh JL. An electronic method to rank order fracture severity across multiple institutions. 25th Annual Meeting of the Orthopaedic Trauma Association, October 7–10, 2009, San Diego, California. Paper #147.
158. **Anderson DD**, Buckwalter JA. Translational research toward preventing post-traumatic osteoarthritis. University of Iowa Institute for Clinical and Translational Science Educational Series: Bench To Bedside. January 28, 2010, Iowa City, Iowa.
159. **Anderson DD**. Mechanical determinants of post-traumatic osteoarthritis. University of Iowa College of Engineering Biomedical Engineering Graduate Seminar (051:191), February 18, 2010, Iowa City, Iowa.
160. **Anderson, DD**, Buckwalter JA. ORS Workshop: Post-traumatic osteoarthritis: Improved understanding and opportunities for early intervention. 56th Annual Meeting of the Orthopaedic Research Society, March 6–9, 2010, New Orleans, Louisiana.

161. Thomas TP, **Anderson DD**, Willis AR, Liu P, Marsh JL, Brown TD. Virtual Pre-Operative reconstruction of Comminuted Articular Fractures. 56th Annual Meeting of the Orthopaedic Research Society, March 6–9, 2010, New Orleans, Louisiana. Paper #1698.
162. Thomas TP, **Anderson DD**, Willis AR, Pengcheng L, Marsh JL, Brown TD. Virtual pre-operative reconstruction of comminuted articular fractures. The University of Iowa College of Engineering's Research Open House, April 8, 2010, Iowa City, Iowa.
163. Michalson JL, Marsh JL, Dirschl DR, DeCoster TA, Brown TD, **Anderson DD**. An electronic method to rank order fracture severity across multiple institutions. 28th Annual Meeting of the Mid-America Orthopaedic Association, April 21–25, 2010, Austin, TX.
164. Yin Y, Zhang X, **Anderson DD**, Williams RM, Sonka M. Automated segmentation of knee joint cartilage in OAR MR images. 4th International Workshop on Imaging Based Measures of Osteoarthritis. June 2–4, 2010 Vancouver, Canada.
165. Yin Y, Zhang X, **Anderson DD**, Williams RM, Sonka M. Automated segmentation of the meniscus from MR images. 4th International Workshop on Imaging Based Measures of Osteoarthritis. June 2–4, 2010 Vancouver, Canada.
166. Thomas TP, Intema F, **Anderson DD**, Lafeber FPJG, Brown TD, Amendola A, Saltzman CL. Quantifying subchondral bone density changes from clinical CT data in osteoarthritic ankles following joint distraction. 4th International Workshop on Imaging Based Measures of Osteoarthritis. June 2–4, 2010 Vancouver, Canada.
167. Vaseenon T, Femino J, Muhlenbruch NJ, Tochigi Y, **Anderson DD**, Amendola A. Medial ankle and syndesmotc ligament instability in different hindfoot motion stress tests. AOFAS 26th Annual Summer Meeting, July 7–10, 2010, National Harbor, Maryland.
168. Kern AM, **Anderson DD**, Brown TD. Equivalence of elastic contact and finite element models of patient-specific contact stress exposure in the human ankle. 6th World Congress on Biomechanics, August 1–6, 2010, Suntec City, Singapore.
169. Frank MC, Joshi A, **Anderson DD**, Thomas TP, Rudert MJ, Tochigi Y, Marsh JL, Brown TD. Patient-specific bone implants using subtractive rapid prototyping. 21st Annual International Solid Freeform Fabrication Symposium, August 9–11, 2010, Austin, Texas.
170. Kern AM, **Anderson DD**, Brown TD. Equivalence of elastic contact and finite element models of patient-specific contact stress exposure in the human ankle. 34th Annual Meeting of the American Society of Biomechanics, August 18–21, 2010, Providence, Rhode Island.
171. Thomas TP, **Anderson DD**, Willis AR, Marsh JL, Brown TD. Virtual pre-operative reconstruction planning for comminuted articular fractures. 34th Annual Meeting of the American Society of Biomechanics, August 18–21, 2010, Providence, Rhode Island. Clinical Biomechanics Award Winner.
172. Vaseenon T, Muhlenbruch N, **Anderson DD**, Tochigi Y, Femino JE. Medial ankle instability assessment using heel varus in an external rotation stress test. 2nd Congress of the International Foot and Ankle Biomechanics Community, September 16–18, 2010, Seattle, Washington. Paper 3.4.1.
173. Kern AM, **Anderson DD**, Brown TD. Equivalence of elastic contact and finite element models of patient-specific contact stress exposure in the human ankle. 2nd Congress of the International Foot and Ankle Biomechanics Community, September 16–18, 2010, Seattle, Washington. Paper 7.3. Best Podium Award Winner.
174. Yin Y, Williams RM, **Anderson DD**, Sonka M. Hierarchical decision framework with a priori shape models for knee joint cartilage segmentation. Medical Image Analysis for the Clinic: A Grand Challenge 2010 – Workshop Proceedings from the 13th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), September 20–24, 2010, Beijing, China. van Ginneken B, Murphy K, Heimann T, Pekar V, Deng X (eds.) pp. 241–250.
175. Kern AM, **Anderson DD**, Brown TD. An expedited approach for patient-specific articular joint contact stress evaluation. 19th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, January 12, 2011, Long Beach, California. Paper #148. Best Presentation Award.
176. Kern AM, **Anderson DD**, Brown TD. Equivalence of elastic contact and finite element analysis as predictors of post-traumatic OA. 57th Annual Meeting of the Orthopaedic Research Society, January 13–16, 2011, Long Beach, California. Paper #0069.

177. Kilburg AT, **Anderson DD**, Marsh JL, Brown TD. An expedited fracture severity metric for post-traumatic OA risk assessment. 57th Annual Meeting of the Orthopaedic Research Society, January 13–16, 2011, Long Beach, California. Paper #1596.
178. Michalson JL, **Anderson DD**, Kuhl LL, Dirschl DR, DeCoster TA, Brown TD, Marsh JL. iTunes rank ordering of articular fracture severity: Multi-institutional rater agreement and outcomes. 57th Annual Meeting of the Orthopaedic Research Society, January 13–16, 2011, Long Beach, California. Paper #1510.
179. Segal NA, **Anderson DD**, Niu J, Lynch J, Torner JC, Nevitt M, Brown TD. Elevated articular contact stress predicts risk for cartilage worsening over 30 months in the MOST Study. 57th Annual Meeting of the Orthopaedic Research Society, January 13–16, 2011, Long Beach, California. Paper #0346.
180. Thomas TP, **Anderson DD**, Willis AR, Liu P, Marsh JL, Brown TD. 3D puzzle solving in surgical planning for comminuted articular fractures. 57th Annual Meeting of the Orthopaedic Research Society, January 13–16, 2011, Long Beach, California. Paper #1511.
181. Yin Y, **Anderson DD**, Williams RM, Sonka M. Fully automated, fast, and robust segmentation of the meniscus from MR images. 57th Annual Meeting of the Orthopaedic Research Society, January 13–16, 2011, Long Beach, California. Paper #2108.
182. **Anderson DD**, Thomas TP, Brown TD, Marsh JL. Computer method for assessing severity and planning reconstruction of comminuted articular fractures. AAOS 2011 Annual Meeting, February 15–19, 2011, San Diego, California. Scientific Exhibit No. SE79.
183. Kern AM, **Anderson DD**, Brown TD. An expedited approach for patient-specific articular joint contact stress evaluation in the human ankle joint. 9th Annual College of Engineering Research Open House, April 7, 2011, Iowa City, Iowa.
184. Ohrt GT, Thomas TP, Yehawi TM, **Anderson DD**, Brown TD, Marsh JL, Karam MD. Articular fracture reduction training for orthopaedic residents: Surgical simulation and assessment. 9th Annual College of Engineering Research Open House, April 7, 2011, Iowa City, Iowa.
185. Ohrt GT, Thomas TP, Yehawi TM, **Anderson DD**, Brown TD, Marsh JL, Karam MD. Articular fracture reduction training for orthopaedic residents: Surgical simulation and assessment. 1st Rocky Mountain Regional American Society of Biomechanics Conference, April 8–9, 2011, Estes Park, Colorado.
186. Yehawi TM, Thomas TP, Marsh JL, **Anderson DD**, Ohrt GT, Brown TD, Karam MD. Articular fracture reduction training for orthopaedic residents through surgical simulation and performance assessment. UIHC Graduate Medical Education Leadership Symposium. April 29, 2011, Iowa City, Iowa. Best Presentation Award.
187. Yehawi TM, Thomas TP, Marsh JL, **Anderson DD**, Ohrt GT, Brown TD, Karam MD. Articular fracture reduction training for orthopaedic residents through surgical simulation and performance assessment. 124th Annual Meeting of the American Orthopaedic Association, June 22–25, 2011, Boston, Massachusetts.
188. **Anderson DD**, Goetz J. Night at the Lab: CAOS – Computer-Assisted Orthopaedic Surgery. The University of Iowa Lifetime Enrichment Adult Program. July 20, 2011, Iowa City, Iowa.
189. Femino J, Vaseenon T, Phisitkul P, Tochigi Y, **Anderson DD**, Amendola A. Varus external rotation stress test for detection of deep deltoid ligament disruption using radiographs. 27th Annual Summer Meeting of the American Orthopaedic Foot & Ankle Society, July 13–16, 2011, Keystone, Colorado. Paper #303. (Selected as semifinalist for consideration of the AOFAS Mann Award.)
190. Kilburg AT, Thomas TP, **Anderson DD**, Brown TD. A method of normalization for CT-based texture analysis in fracture severity assessment. 35th Annual Meeting of the American Society of Biomechanics, August 10–13, 2011, Long Beach, California.
191. Kern AM, **Anderson DD**, Brown TD. Expedited evaluation of contact stress in the human ankle joint. 35th Annual Meeting of the American Society of Biomechanics, August 10–13, 2011, Long Beach, California.
192. **Anderson DD**. Critical Variables (stiffness, strain, etc.) – What is Best? Presented in the Symposium – Biomechanics: Choosing the right model. Basic Science Focus Forum, 27th Annual Meeting of the Orthopaedic Trauma Association. October 12–15, 2011. San Antonio, Texas.
193. **Anderson DD**. The pathomechanical basis of post-traumatic osteoarthritis. University of Florida Center for Exercise Science Research Seminar, January 26, 2012, Gainesville, Florida.

194. Yehyawi TM, Ohrt GT, Thomas TP, Marsh JL, **Anderson DD**, Karam MD, Brown TD. A Surgical Simulation Training Model for Complex Fracture Surgery. (Paper #757). AAOS 2012 Annual Meeting, February 7–11, 2012, San Francisco, California.
195. Michalson JL, **Anderson DD**, Dirschl DR, DeCoster TA, Brown TD, Kuhl LL, Marsh JL, Karam MD. Neither injury severity nor reduction correlate with outcome in tibial plateau fractures. 30th Annual Meeting of the Mid-America Orthopaedic Association, April 18–22, 2012, Bonita Springs, Florida.
196. Kho JY, Yehyawi TM, Marsh JL, Karam MD, Thomas GW, Ohrt GT, **Anderson DD**, Brown TD. Articular fracture reduction simulation training program for orthopaedic residents. UIHC Graduate Medical Education Leadership Symposium. May 22, 2012, Iowa City, Iowa.
197. Kho JY, Yehyawi TM, Marsh JL, **Anderson DD**, Ohrt GT, Brown TD, Karam MD. Articular fracture reduction training for orthopaedic residents through surgical simulation and performance assessment. 125th Annual Meeting of the American Orthopaedic Association, June 27–30, 2012, National Harbor, Maryland.
198. Frank MC, Joshi A, Lei S, **Anderson DD**, Tochigi Y, Brown TD. Creating implants from allograft bone using subtractive rapid prototyping. 23rd Annual International Solid Freeform Fabrication Symposium, August 6–8, 2012, Austin, Texas.
199. Kern AM, Segal NA, Lynch JA, Sharma L, **Anderson DD**. Highly automated methods for subject-specific, population-wide investigations of habitual contact stress exposure in the knee. 36th Annual Meeting of the American Society of Biomechanics, August 15–18, 2012, Gainesville, Florida.
200. Kern AM, Kang L, Baer TE, Segal NA, **Anderson DD**. 3D-to-2D registration for the EOS biplanar radiographic imaging system. 36th Annual Mtg of the American Society of Biomechanics, August 15–18, 2012, Gainesville, Florida.
201. Ohrt GT, Karam MD, Thomas GW, Kho JY, Yehyawi TM, Marsh JL, **Anderson DD**. Surgical simulation: Validating methods to improve orthopaedic resident skills competency. 36th Annual Meeting of the American Society of Biomechanics, August 15–18, 2012, Gainesville, Florida.
202. Lack WD, Elkins JM, Lujan T, **Anderson DD**, Brown TD, Marsh JL. Finite element analysis of distal femur fixation: Fracture gap motion predicts radiographic outcome (**New Investigator Recognition Award Paper**). 59th Annual Meeting of the Orthopaedic Research Society, January 26–29, 2013, San Antonio, Texas.
203. Segal NA, Glass N, Stockman T, Kern AM, **Anderson DD**, Niu J, Eckstein F, Lynch JA, Felson DT, Lewis C, Torner JC, Nevitt M, Sharma L. The relationship between tibiofemoral contact stress at baseline and meaningful worsening in knee pain by 60 months. 59th Annual Meeting of the Orthopaedic Research Society, January 26–29, 2013, San Antonio, Texas.
204. Kho JY, Karam MD, Ohrt GT, Thomas G, Yehyawi TM, **Anderson DD**, Marsh JL. A surgical skills simulation training program in an articular fracture model for orthopaedic junior residents. (Paper #763). AAOS 2013 Annual Meeting, March 19–23, 2013, Chicago, Illinois.
205. Marsh JL, Karam MD, Yehyawi TM, Westerlind B, Kho J, **Anderson DD**. A surgical skills training curriculum for PGY-1 Orthopaedic Residents. AAOS 2013 Annual Meeting, March 19–23, 2013, Chicago, Illinois. Scientific Exhibit No. SE46.
206. **Anderson DD**. The pathomechanical basis of post-traumatic osteoarthritis. University of Kansas Bioengineering Graduate Research Seminar, April 8, 2013, Lawrence, Kansas.
207. Segal NA, Stockman TJ, Kern AM, Findlay C, Kang L, Baer TE, **Anderson DD**. Assessment of the effect of an off-the-shelf realigning brace on tibiofemoral contact stress. 2013 World Congress on Osteoarthritis, April 18–21, 2013, Philadelphia, Pennsylvania. *Osteoarthritis Cartilage*. 2013;21(Suppl 1):S90–S91. <https://doi.org/10.1016/j.joca.2013.02.194>
208. Kho JY, Johns B, Thomas GW, Karam MD, **Anderson DD**, Marsh JL. Wire-navigation simulator training in a proximal femur model. UIHC Graduate Medical Education Leadership Symposium. May 17, 2013, Iowa City, Iowa.
209. Westerlind B, Yehyawi TM, Karam MD, **Anderson DD**, Marsh JL. A novel surgical skills training curriculum for junior orthopaedic residents. UIHC GME Leadership Symposium. May 17, 2013, Iowa City, Iowa.
210. Johns B, Thomas GW, Kho JY, Karam MD, Marsh JL, **Anderson DD**. The advantage of instantaneous versus delayed feedback in orthopaedic simulation. 2013 Industrial and Systems Engineering Research Conference, May 18–22, 2013, San Juan, Puerto Rico.

211. Marsh JL, Kho JY, Johns B, Thomas GW, Karam MD, **Anderson DD**. A novel approach to teaching visual-spatial skills in wire navigated orthopaedic procedures. 126th Annual Meeting of the American Orthopaedic Association, June 11–15, 2013, Denver, Colorado.
212. Westerlind B, Yehyawi TM, Karam MD, **Anderson DD**, Marsh JL. A surgical skills training curriculum for PGY-1 orthopaedic residents. 126th Annual Meeting of the American Orthopaedic Association, June 11–15, 2013, Denver, Colorado.
213. Thomas GW, **Anderson DD**, Karam MD, Johns B, Murillo SR, Lawrence Marsh JL. A flexible orthopaedic trauma surgery box skills trainer. 37th Annual Meeting of the American Society of Biomechanics, September 4–7, 2013, Omaha, Nebraska.
214. Johns B, Thomas GW, Kho JY, Karam MD, Marsh JL, **Anderson DD**. A novel augmented reality simulator for teaching wire navigation skills in treating intertrochanteric hip fractures. 37th Annual Meeting of the American Society of Biomechanics, September 4–7, 2013, Omaha, Nebraska.
215. Ohrt GT, Thomas GW, Karam MD, Yehyawi TM, Westerlind BO, Marsh JL, **Anderson DD**. Simulation to improve surgical articular fracture reduction skills. 37th Annual Meeting of the American Society of Biomechanics, September 4–7, 2013, Omaha, Nebraska.
216. Kern AM, **Anderson DD**. Toward clinically applicable reconstruction planning for comminuted articular fractures. 37th Annual Meeting of the American Society of Biomechanics, September 4–7, 2013, Omaha, Nebraska.
217. Permeswaran V, Goetz JE, Hettrich CM, **Anderson DD**. A finite element modeling approach to understanding critical mechanical trade-offs in reverse shoulder arthroplasty. 37th Annual Meeting of the American Society of Biomechanics, September 4–7, 2013, Omaha, Nebraska.
218. Lack WD, Elkins JM, Lujan T, **Anderson DD**, Brown TD, Marsh JL. Finite element analysis of the distal femur: Fracture motion predicts clinical callus. Basic Science Focus Forum, 29th Annual Meeting of the Orthopaedic Trauma Association, October 9–10, 2013, Phoenix, Arizona.
219. Kern AM, **Anderson DD**. Expedited contact stress prediction on post-reduction acetabular fractures. 60th Annual Meeting of the Orthopaedic Research Society, March 15–18, 2014, New Orleans, Louisiana.
220. Permeswaran VN, **Anderson DD**, Goetz JE, Hettrich CM. Understanding the mechanical trade-offs in changing centers of rotation for reverse shoulder arthroplasty design. 60th Annual Meeting of the Orthopaedic Research Society, March 15–18, 2014, New Orleans, Louisiana.
221. Karam M, Westerlind B, Thomas G, **Anderson DD**, Marsh JL. Midwest Orthopaedic Surgical Skills Consortium. University of Iowa Internal Medicine Quality Improvement Symposium. April 4th, 2014, Iowa City, Iowa.
222. Karam M, Westerlind B, Thomas G, **Anderson DD**, Marsh, JL. Midwest Orthopaedic Surgical Skills (MOSS) Consortium. GME Leadership Symposium, Educational Initiatives. April 18, 2014, Iowa City, Iowa.
223. **Anderson DD**, Kern AM, Stockman TJ, Findlay CM, Segal NA. Assessing knee OA risk from contact stress using low-dose weight-bearing CT. OARSI World Congress on Osteoarthritis, April 24–27, 2014, Paris, France. *Osteoarthritis Cartilage*. 2014;22(Supp 1):S102-S103. <https://doi.org/10.1016/j.joca.2014.02.193>
224. Vaseenon T, Goetz JE, Tochigi Y, Phisitkul P, **Anderson DD**, Amendola A, Femino JE. Three-dimensional analysis of ankle instability with external rotation stress test in two hindfoot positions using CT: A cadaveric study. AOA/COA Combined Meeting, June 18–21, 2014, Montreal, Quebec, Canada.
225. Karam MD, Thomas GW, Rojas-Murillo S, Hanley J, **Anderson DD**. Orthopaedic image interpretation assessment: Matching CT slices with distal tibia fracture radiographs. AOA/COA Combined Meeting, June 18–21, 2014, Montreal, Quebec, Canada.
226. Segal NA, Kern AM, Stockman TJ, **Anderson DD**. Person-specific modeling for prediction of future knee health in population-representative cohorts. 7th World Congress of Biomechanics, July 7–11, 2014, Boston, Massachusetts.
227. Segal NA, Frick E, Nevitt MC, Torner JC, Felson DT, Guermazi A, **Anderson DD**. Association between measurements of joint space width on standing CT and WORMS cartilage morphology. International Workshop on Osteoarthritis Imaging, July 9–12, 2014, Reykjavik, Iceland.
228. Segal NA, Frick E, Duryea J, Nevitt MC, Niu J, Torner JC, Felson DT, **Anderson DD**. Comparison of measurements of tibiofemoral joint space width from standing CT and fixed flexion radiography. International Workshop on Osteoarthritis Imaging, July 9–12, 2014, Reykjavik, Iceland.

229. Segal NA, Glass N, Stockman T, Kern AM, **Anderson DD**, Niu J, Eckstein F, Lynch JA, Felson DT, Lewis CE, Torner JC, Nevitt MC, Sharma L. The relationship between tibiofemoral contact stress and worsening of knee pain at 5-year follow-up. International Congress on Joint Reconstruction – Pan Pacific Orthopaedic Congress, July 16–19, 2014, Waikoloa, Hawaii.
230. Hettrich CM, Permeswaran VN, Goetz JE, **Anderson DD**. Mechanical effects of changing centers of rotation in reverse shoulder arthroplasty using a computational model. 25th Congress of the European Society for Surgery of the Shoulder and Elbow, September 17–20, 2014, Istanbul, Turkey.
231. Kern AM, **Anderson DD**. Step-off vs. contact stress following articular fracture reduction: Which measure is better for predicting PTOA? 61st Annual Meeting of the Orthopaedic Research Society, March 28–31, 2015, Las Vegas, Nevada.
232. Kern AM, **Anderson DD**. Computer-based 3d puzzle solving for pre-operative planning of articular fracture reductions in the ankle, knee, and hip. 61st Annual Meeting of the Orthopaedic Research Society, March 28–31, 2015, Las Vegas, Nevada.
233. Dibbern KN, Tantavisut S, Kern AM, Marsh JL, **Anderson DD**. The relationship between elevated contact stress and clinical outcome following intra-articular calcaneal fractures. 61st Annual Meeting of the Orthopaedic Research Society, March 28–31, 2015, Las Vegas, Nevada.
234. Tantavisut S, Dibbern KN, Karam MD, Phisitkul P, **Anderson DD**, Marsh JL. Novel CT radiograph measurement technique for postoperative intraarticular fracture of the calcaneus. 61st Annual Meeting of the Orthopaedic Research Society, March 28–31, 2015, Las Vegas, Nevada.
235. Permeswaran VN, **Anderson DD**, Goetz JE, Hettrich CM. A finite element analysis of mechanical trade-offs encountered in changing centers of rotation in Reverse Shoulder Arthroplasty. 61st Annual Meeting of the Orthopaedic Research Society, March 28–31, 2015, Las Vegas, Nevada.
236. Segal NA, Frick E, Nevitt MC, Torner JC, Felson DT, Guermazi A, **Anderson DD**. Correlation between 3D joint space width on standing CT and WORMS cartilage morphology. OARSI World Congress on Osteoarthritis, April 30–May 3, 2015, Seattle, Washington. Osteoarthritis Cartilage. 2015;23(Supp 2):A211-A212. <https://doi.org/10.1016/j.joca.2015.02.410>
237. Segal NA, Bergin J, Findlay C, **Anderson DD**. Test-retest reliability of tibiofemoral joint space width measurements using low-dose standing CT. OARSI World Congress on Osteoarthritis, April 30–May 3, 2015, Seattle, Washington. 2015;23(Supp 2):A230-A231. <https://doi.org/10.1016/j.joca.2015.02.435>
238. Hettrich CM, Permeswaran VN, **Anderson DD**, Goetz JE. A finite element model measuring the mechanical trade-offs of changing centers of rotation in reverse shoulder arthroplasty. 10th Biennial Congress of the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine, June 7–11, 2015, Lyon, France.
239. Koehler DM, Thomas GW, Karam MD, Lafferty PM, Ohrt G, Marsh JL, Van Heest AE, **Anderson DD**. Surgical coaching from head-camera video for fluoroscopically guided articular fracture surgery. 128th Annual Meeting of the American Orthopaedic Association, June 24–27, 2015, Providence, Rhode Island.
240. Permeswaran V, Hettrich CM, Goetz JE, **Anderson DD**. Validating a computational model of reverse shoulder arthroplasty. 39th Annual Meeting of the American Society of Biomechanics, August 5–8, 2015, Columbus, Ohio.
241. Dibbern KN, Kempton LB, Higgins TF, McKinley TO, Marsh JL, **Anderson DD**. Comparison of objective fracture severity measures in tibial plateau and pilon fractures. 39th Annual Meeting of the American Society of Biomechanics, August 5–8, 2015, Columbus, Ohio.
242. Long SA, Thomas GW, Taylor LK, Rink CE, **Anderson DD**. A vision based, hybrid reality, wire navigation simulator. 39th Annual Meeting of the American Society of Biomechanics, August 5–8, 2015, Columbus, Ohio.
243. Taylor LK, Rink CE, Long SA, Thomas GW, Karam MD, **Anderson DD**. Assessing wire navigation performance in treating hip fractures. 39th Annual Meeting of the American Society of Biomechanics, August 5–8, 2015, Columbus, Ohio.
244. Kern AM, Long SA, Thomas GW, **Anderson DD**. Intra-operative fragment tracking for articular fracture reduction. 39th Annual Meeting of the American Society of Biomechanics, August 5–8, 2015, Columbus, Ohio.
245. Permeswaran V, Hettrich CM, Goetz JE, **Anderson DD**. Examination of the mechanical consequences of changing centers of rotation in reverse shoulder arthroplasty. 26th Congress of the European Society for Surgery of the Shoulder and Elbow, September 16–19, 2015, Milan, Italy.

246. Kempton LB, Dibbern K, **Anderson DD**, Morshed S, Higgins T, Marsh JL, McKinley T. Objective metric of energy absorbed in tibial plateau fractures corresponds well to clinician assessment of fracture severity. 31st Annual Meeting of the Orthopaedic Trauma Association, October 7–10, 2015, San Diego, California.
247. **Anderson DD**, Long SA, Thomas GW, Karam MD. A role for objective performance assessment in orthopaedic training. 16th International Meeting on Simulation in Healthcare, January 16–20, 2016, San Diego, California.
248. Thomas GW, Taylor L, Long SA, Rink C, Kreiter, C, **Anderson DD**. Measuring surgical skill in the operating room for orthopaedic simulator validation. 16th International Meeting on Simulation in Healthcare, January 16–20, 2016, San Diego, California.
249. Long SA, Taylor L, Rink C, **Anderson DD**, Thomas GW. Developing a hybrid reality simulator to train orthopaedic residents in wire navigation. 16th International Meeting on Simulation in Healthcare, January 16–20, 2016, San Diego, California.
250. Dibbern KN, Kempton LB, Higgins TF, McKinley TO, Marsh JL, **Anderson DD**. Energy absorbed in fracturing is similar in tibial plateau and pilon fractures over a full spectrum of severity. 83rd Annual Meeting of the American Academy of Orthopaedic Surgeons, March 1–5, 2016, Orlando, Florida.
251. Kempton LB, Dibbern K, **Anderson DD**, Morshed S, Higgins T, Marsh JL, McKinley T. CT-based metric of tibial plateau fracture energy corresponds well to clinician assessment of fracture severity. 83rd Annual Meeting of the American Academy of Orthopaedic Surgeons, March 1–5, 2016, Orlando, Florida.
252. Kern AM, **Anderson DD**. A system for intra-operative contact stress estimation to aid in surgical reduction of articular fractures. 62nd Annual Meeting of the Orthopaedic Research Society, March 5–8, 2016, Orlando, Florida.
253. Dibbern KN, Kempton LB, McKinley TO, Higgins TF, Marsh JL, **Anderson DD**. Quantifying tibial plateau fracture severity: Fracture energy agrees with clinical rank ordering. 62nd Annual Meeting of the Orthopaedic Research Society, March 5–8, 2016, Orlando, Florida.
254. Townsend KC, Rudert MJ, Kern AM, Willey MC, **Anderson DD**, Goetz JE. Validation of hip joint contact stresses computed using discrete element analysis. 62nd Annual Meeting of the Orthopaedic Research Society, March 5–8, 2016, Orlando, Florida.
255. Permeswaran VN, **Anderson DD**, Caceres A, Goetz JE, Hettrich CM. The effect of glenoid version on range of motion and subluxation in reverse shoulder arthroplasty. 62nd Annual Meeting of the Orthopaedic Research Society, March 5–8, 2016, Orlando, Florida.
256. Dibbern KN, Higgins TF, Kempton LB, McKinley TO, Marsh JL, **Anderson DD**. Objective fracture energy assessment of tibial plateau fractures loosely corresponds to Schatzker classification. 62nd Annual Meeting of the Orthopaedic Research Society, March 5–8, 2016, Orlando, Florida.
257. Rao K, Dibbern KN, Phisitkul P, Marsh JL, **Anderson DD**. Relating fracture severity to post-traumatic osteoarthritis risk after intra-articular calcaneal fractures. 62nd Annual Meeting of the Orthopaedic Research Society, March 5–8, 2016, Orlando, Florida.
258. Long SA, Thomas GW, **Anderson DD**. Designing an affordable wire navigation surgical simulator. 15th Annual Design of Medical Devices Conference, April 12–14, 2016, Minneapolis, Minnesota.
259. Segal NA, Saha P, Guermazi A, **Anderson DD**. A new imaging modality for routine clinical 3D assessment of both bone and cartilage. AAOS/ORS Tackling Joint Disease by Understanding Crosstalk between Cartilage and Bone (“Joint Crosstalk”) research symposium, April 28–30, 2016, Rosemont, Illinois.
260. Mosqueda JM, Dibbern KN, Willey MC, Marsh JL, **Anderson DD**. Elevated contact stress after surgical reduction of acetabular fractures correlates with progression to post-traumatic osteoarthritis. 40th Annual Meeting of the American Society of Biomechanics, August 2–5, 2016, Raleigh, North Carolina.
261. Permeswaran VN, Goetz JE, **Anderson DD**, Caceres AP, Hettrich CM. Finite element analysis of reverse shoulder arthroplasty: Influence of implantation choices on impingement and subluxation. 40th Annual Meeting of the American Society of Biomechanics, August 2–5, 2016, Raleigh, North Carolina.
262. Dibbern KN, Kempton LB, Higgins TF, McKinley TO, Marsh JL, **Anderson DD**. Clinical fractures of the tibial plateau involve similar energies as the tibial pilon. 40th Annual Meeting of the American Society of Biomechanics, August 2–5, 2016, Raleigh, North Carolina.

263. Caceres AP, Permeswaran VN, Goetz JE, **Anderson DD**, Hettrich CM. The influence of different rotator cuff deficiencies on shoulder stability following reverse shoulder arthroplasty. 40th Annual Meeting of the American Society of Biomechanics, August 2–5, 2016, Raleigh, North Carolina.
264. Rao K, Dibbern KN, Phisitkul P, Marsh JL, **Anderson DD**. Post-traumatic OA risk relative to intra-articular calcaneal fracture severity. 32nd Annual Meeting of the Orthopaedic Trauma Association, October 5–8, 2016, National Harbor, Maryland.
265. Holland TC, Dibbern KN, Marsh JL, **Anderson DD**, Willey MC. Objective prediction of post-traumatic OA risk following acetabular fractures based on severity. 63rd Annual Meeting of the Orthopaedic Research Society, March 19–22, 2017, San Diego, California.
266. Dibbern KN, Caldwell L, Lawler E, **Anderson DD**. Less energy is absorbed in fracturing the distal radius than in lower extremity fractures. 63rd Annual Meeting of the Orthopaedic Research Society, March 19–22, 2017, San Diego, California.
267. Phisitkul P, Akoh C, Dibbern KN, Rungprai C, Siddappa VH, Sittapiroj T, Barg A, **Anderson DD**. Arthroscopic access to osteochondral lesions of the talus: Effects of limited ankle range of motion on arthroscopic accessibility. 63rd Annual Meeting of the Orthopaedic Research Society, March 19–22, 2017, San Diego, California.
268. Dibbern KN, Kern AM, **Anderson DD**. A universally applicable objective CT-based method for quantifying articular fracture severity. 63rd Annual Meeting of the Orthopaedic Research Society, March 19–22, 2017, San Diego, California.
269. Permeswaran VN, Goetz JE, Caceres A, **Anderson DD**, Hettrich CM. The effect of polyethylene rotation on impingement and instability in reverse shoulder arthroplasty. 63rd Annual Meeting of the Orthopaedic Research Society, March 19–22, 2017, San Diego, California.
270. Permeswaran VN, Goetz JE, Caceres A, **Anderson DD**, Hettrich CM. The influence of critical shoulder angle on glenohumeral joint load in reverse shoulder arthroplasty. 63rd Annual Meeting of the Orthopaedic Research Society, March 19–22, 2017, San Diego, California.
271. Hall JR, Permeswaran VN, Caceres A, **Anderson DD**, Goetz JE, Hettrich CM. Determining return of scapulohumeral rhythm in patients after reverse shoulder arthroplasty. 63rd Annual Meeting of the Orthopaedic Research Society, March 19–22, 2017, San Diego, California.
272. Caceres AP, Permeswaran VN, Goetz JE, Hettrich CM, **Anderson DD**. The influence of different rotator cuff deficiencies on shoulder stability following reverse shoulder arthroplasty. 63rd Annual Meeting of the Orthopaedic Research Society, March 19–22, 2017, San Diego, California.
273. Long SA, Thomas GW, **Anderson DD**. Designing an extensible wire navigation simulation platform. 16th Annual Design of Medical Devices Conference, April 11–13, 2017, Minneapolis, Minnesota.
274. Dibbern KN, Willey MC, Phisitkul P, Glass NA, Marsh JL, **Anderson DD**. Fracture severity predicts OA risk following intra-articular fractures. 2017 OARSI World Congress on Osteoarthritis, April 27–30, 2017, Las Vegas, Nevada. *Osteoarthritis Cartilage*. 2017;25(Supp 1):S109–110. <https://doi.org/10.1016/j.joca.2017.02.177>
275. Segal NA, Rabe K, Waheed S, **Anderson DD**. The effect of arch drop on tibial rotation and tibiofemoral articular contact stress. 2017 OARSI World Congress on Osteoarthritis, April 27–30, 2017, Las Vegas, Nevada. *Osteoarthritis Cartilage*. 2017;25(Supp 1):S139–140. <https://doi.org/10.1016/j.joca.2017.02.228>
276. Karam MD, Long SA, Marsh JL, Thomas GW, **Anderson DD**. An augmented reality simulator improves guide wire navigation skills for first-year residents. 2017 American Orthopaedic Association Annual Leadership Meeting, June 20–24, 2017, Charlotte, North Carolina.
277. Karam MD, Taylor L, **Anderson DD**, Kreiter C, Marsh JL, Thomas GW. Measures of hip fracture wire navigation performance in the operating room reflect surgical experience. 2017 American Orthopaedic Association Annual Leadership Meeting, June 20–24, 2017, Charlotte, North Carolina.
278. Rivera JC, Dibbern KN, Marsh JL, **Anderson DD**. Objective CT-based assessment of severity in articular fractures of the tibial pylon. 26th Annual Scientific Meeting of the Limb Lengthening and Reconstruction Society, July 21–22, 2017. Park City, Utah.
279. Dibbern KN, Shin K, Andrew M, **Anderson DD**. Assessing fracture severity in the TMJ: Can fracture energy be computed using CBCT? 41st Annual Meeting of the American Society of Biomechanics, August 8–11, 2017, Boulder, Colorado.

280. Kern AM, Willey MC, Marsh JL, **Anderson DD**. Intra-OP biomechanical guidance improves articular fracture reduction. 41st Annual Meeting of the American Society of Biomechanics, August 8–11, 2017, Boulder, Colorado.
281. Kern AM, Willey MC, Marsh JL, **Anderson DD**. An intra-operative biomechanical guidance system for reducing articular fractures. 41st Annual Meeting of the American Society of Biomechanics, August 8–11, 2017, Boulder, Colorado.
282. Long S, Thomas G, Chrisman M, Rodriguez A, Karam M, **Anderson DD**. Simulator training leads to improved wire navigation in first year orthopaedic residents. 41st Annual Meeting of the American Society of Biomechanics, August 8–11, 2017, Boulder, Colorado.
283. Permeswaran VN, Hall JR, Caceres AP, **Anderson DD**, Goetz JE, Hettrich CM. Determining return of scapulohumeral rhythm in patients after reverse shoulder arthroplasty. 41st Annual Meeting of the American Society of Biomechanics, August 8–11, 2017, Boulder, Colorado.
284. Permeswaran VN, Rudert MJ, **Anderson DD**, Hettrich C, Goetz JE. The material properties of stabilizing rotator cuff tendons relevant in reverse shoulder arthroplasty. 41st Annual Meeting of the American Society of Biomechanics, August 8–11, 2017, Boulder, Colorado.
285. Permeswaran VN, Goetz JE, **Anderson DD**. A finite element modeling approach to studying instability in reverse shoulder arthroplasty. 41st Annual Meeting of the American Society of Biomechanics, August 8–11, 2017, Boulder, Colorado.
286. Dibbern KN, Rivera J, Marsh JL, **Anderson DD**. Objective CT-based assessment of severity in articular fractures of the tibial pilon. 2017 Military Health System Research Symposium, August 27–30, 2017, Kissimmee Florida.
287. Dibbern KN, Rivera JC, Marsh JL, **Anderson DD**. Objective metrics of tibial pilon fracture severity predict secondary amputation. 2018 AAOS/OTA/SOMOS/ORS Extremity War Injuries XIII symposium (EWI XIII), January 21–23, 2018, Washington, DC.
288. **Anderson DD**. Moderator NIRA Scientific Session: Cartilage disease injury and repair. 64th Annual Meeting of the Orthopaedic Research Society, March 10–13, 2018, New Orleans, Louisiana.
289. Dibbern KN, Rivera JC, Marsh JL, **Anderson DD**. Objective assessment of tibial pilon articular fracture severity predictive of secondary amputation. 64th Annual Meeting of the Orthopaedic Research Society, March 10–13, 2018, New Orleans, Louisiana.
290. Long SA, Thomas GW, Chrisman M, Rodriguez AV, Karam MD, **Anderson DD**. Simulator training leads to improved wire navigation in first year residents. 64th Annual Meeting of the Orthopaedic Research Society, March 10–13, 2018, New Orleans, Louisiana.
291. Thomas HD, Dibbern KN, Holland TC, CarlLee T, Rao K, Marsh JL, Willey MC, Goetz JE, **Anderson DD**. Joint contact stress correlates with clinical measures of osteoarthritis in surgically reduced acetabular fractures. 64th Annual Meeting of the Orthopaedic Research Society, March 10–13, 2018, New Orleans, Louisiana.
292. Tatum M, Thomas GW, **Anderson DD**. Design of a percutaneous articular fracture reduction simulator. 2018 Design of Medical Devices Conference, April 9–12, 2018, Minneapolis, Minnesota.
293. Kern A, Willey MC, Marsh JL, **Anderson DD**. Intraoperative biomechanical guidance improves articular fracture reduction. 36th Annual Meeting of the Mid-America Orthopaedic Association, April 18–22, 2018, San Antonio, Texas.
294. Tofte JN, Caldwell LS, Dibbern KN, Lawler EA, **Anderson DD**. Fracture severity clinical rank ordering and perceived anatomic fixation difficulty are concordant with distal radius fracture energy absorption. 36th Annual Meeting of the Mid-America Orthopaedic Association, April 18–22, 2018, San Antonio, Texas.
295. Kern AM, Willey MC, Marsh JL, **Anderson DD**. Intra-op biomechanical guidance improves articular fracture reduction, limiting post-traumatic OA risk. 2018 OARSI World Congress on Osteoarthritis, April 26–29, 2018, Liverpool, United Kingdom.
296. Thomas HD, Dibbern KN, Holland TC, Marsh JL, Willey MC, Goetz JE, **Anderson DD**. Elevated contact stress after acetabular fracture correlates with development of radiographic OA. 2018 OARSI World Congress on Osteoarthritis, April 26–29, 2018, Liverpool, United Kingdom.
297. Karam MD, Long S, Marsh JL, **Anderson DD**, Thomas GW. Looking beyond the tip apex distance to assess wire navigation performance. Summer 2018 CORD/American Orthopaedic Association Annual Leadership Meeting, June 27–30, 2018, Boston, Massachusetts.

298. Rabe KG, Segal NA, Dibbern KN, **Anderson DD**, Nevitt MC. Responsiveness of standing CT for measurement of joint space narrowing over 60 months. 12th International Workshop on Osteoarthritis Imaging, July 5–8, 2018, Menton, France.
299. Dibbern KN, Perry BJ, Spratley EM, Salzar RS, Rivera JC, **Anderson DD**. Novel severity measures link fractures from cadaveric experiments to those in battlefield blast cases. 8th World Congress of Biomechanics, July 8–12, 2018, Dublin, Ireland.
300. Kern AM, Willey MC, **Anderson DD**. Intra-op biomechanical guidance improves articular fracture reduction quality, limiting post-traumatic OA risk. 8th World Congress of Biomechanics, July 8–12, 2018, Dublin, Ireland. *Osteoarthritis Cartilage*. 2018;26(Supp 1):S375. <https://doi.org/10.1016/j.joca.2018.02.737>
301. Permeswaran VN, Goetz JE, **Anderson DD**. A finite element approach to studying instability in reverse shoulder arthroplasty. 8th World Congress of Biomechanics, July 8–12, 2018, Dublin, Ireland.
302. Thomas-Aitken HD, Dibbern KN, Holland TC, Marsh JL, Willey MC, Goetz JE, **Anderson DD**. Elevated contact stress after acetabular fracture correlates with the development of radiographic OA. 8th World Congress of Biomechanics, July 8–12, 2018, Dublin, Ireland. *Osteoarthritis Cartilage*. 2018;26(Supp 1):S374–S375. <https://doi.org/10.1016/j.joca.2018.02.736>
303. Dibbern KN, Holland TC, Thomas-Aitken HD, CarlLee T, Willey MC, Goetz JE, Marsh JL, **Anderson DD**. Contact stress over-exposure correlates with OA development in acetabular fractures. 42nd Annual Meeting of the American Society of Biomechanics, August 8–11, 2018, Rochester, Minnesota. 2018. 2018 Clinical Biomechanics Award.
304. Hiller J, Dibbern KN, **Anderson DD**. Creation of subject-specific subtalar joint contact models from weight bearing CT scans. 42nd Annual Meeting of the American Society of Biomechanics, August 8–11, 2018, Rochester, Minnesota.
305. Thomas HD, Dibbern KN, CarlLee TL, Marsh JL, Willey MC, Goetz JE, **Anderson DD**. Elevated joint contact stress is associated with radiographic measures of osteoarthritis in operatively treated acetabular fractures at two years. 34th Annual Meeting of the Orthopaedic Trauma Association, October 17–20, 2018, Orlando, Florida.
306. Willey M, Compton J, **Anderson DD**, Kleweno C, Agel J, Scott E, Sorensen E, Bui G, Dibbern K, Marsh JL. Standing CT scan after pilon fracture fixation demonstrates significant early joint space narrowing. 65th Annual Meeting of the Orthopaedic Research Society, February 2–5, 2019, Austin, Texas.
307. Dibbern KN, Thomas-Aitken H, CarlLee T, Willey M, Goetz J, Marsh JL, **Anderson DD**. Contact stress over-exposure correlates with PTOA risk in acetabular fractures. 65th Annual Meeting of the Orthopaedic Research Society, February 2–5, 2019, Austin, Texas.
308. Caceres AP, Patterson BM, **Anderson DD**. The effects of implant design variations on instability following reverse shoulder arthroplasty. 65th Annual Meeting of the Orthopaedic Research Society, February 2–5, 2019, Austin, Texas.
309. Ho M, Dibbern KN, Willey MC, Marsh JL, **Anderson DD**. 3D joint space width measures from weight bearing CT detect early degenerative joint changes. 65th Annual Meeting of the Orthopaedic Research Society, February 2–5, 2019, Austin, Texas.
310. Day MA, Ho H, Dibbern K, Rao K, An Q, **Anderson DD**, Marsh JL. 3D joint space width from weightbearing CT correlates with outcomes after intra-articular calcaneal fracture. 65th Annual Meeting of the Orthopaedic Research Society, February 2–5, 2019, Austin, Texas.
311. Long S, Thomas G, Weiss D, Karam M, Marsh JL, **Anderson D**. Are wire navigation skills acquired at a fracture course equivalent to those from simulator training? 65th Annual Meeting of the Orthopaedic Research Society, February 2–5, 2019, Austin, Texas.
312. Long S, Abid R, Thomas G, Karam M, **Anderson D**. Hip wire navigation decision making: From simulation to the operating room. 65th Annual Meeting of the Orthopaedic Research Society, February 2–5, 2019, Austin, Texas.
313. Dibbern KN, McKinley T, Marsh JL, **Anderson DD**. Toward a unifying understanding of the influence of acute fracture severity on PTOA risk following intra-articular fractures. 65th Annual Meeting of the Orthopaedic Research Society, February 2–5, 2019, Austin, Texas.
314. **Anderson DD**, Long S, Karam MD, Marsh JL, Thomas GW. Overcoming barriers to the meaningful integration of simulation-based skills training in surgical education: Case study in orthopaedic trauma. 2019 American College of

- Surgeons Surgical Simulation Summit pre-meeting program – Surgeons and Engineers: A Dialogue on Surgical Simulation, March 14, 2019, Chicago, Illinois.
315. Day MA, Dibbern K, Rao K, Fruehling C, **Anderson D**, Marsh JL. 3D joint space width on weightbearing CT correlates with pain after intra-articular calcaneal fracture treatment. 36th Annual Meeting of the Mid-America Orthopaedic Association, April 10–14, 2019, Miramar Beach, Florida.
316. Patterson B, Caceres A, **Anderson D**. Mechanical tradeoffs in reverse shoulder arthroplasty: A finite element analysis. 36th Annual Meeting of the Mid-America Orthopaedic Association, April 10–14, 2019, Miramar Beach, Florida.
317. Ho M, Dibbern K, Willey M, Marsh JL, **Anderson DD**. 3D joint space width measures from weight bearing CT detect early joint changes. The University of Iowa College of Engineering Research Open House, April 11, 2019, Iowa City, Iowa. Selected for Best Undergraduate Poster Award Winner – Biomedical Engineering.
318. Dibbern K, McKinley TO, Marsh J, **Anderson DD**. The influence of acute fracture severity on OA risk following intra-articular fractures. Osteoarthritis Research Society International 2019 World Congress, May 2–5, 2019, Toronto, Ontario, Canada. *Osteoarthritis Cartilage*. 2019;27(Supp 1):S117–118. <https://doi.org/10.1016/j.joca.2019.02.174>
319. Ho M, Dibbern K, Willey M, Kleweno CP, Agel J, Marsh JL, **Anderson DD**. Weight bearing CT 3D joint space width measures show early joint changes following intra-articular fractures. Osteoarthritis Research Society International 2019 World Congress, May 2–5, 2019, Toronto, Ontario, Canada. *Osteoarthritis Cartilage*. 2019;27(Supp 1):S101–102. <https://doi.org/10.1016/j.joca.2019.02.149>
320. Segal NA, Kothari MD, Rabe KG, **Anderson DD**, Nevitt MC, Lynch JA. The relationship of three-dimensional joint space width measured on standing computed tomography with concurrent pain and physical function in the MOST Study. Osteoarthritis Research Society International 2019 World Congress, May 2–5, 2019, Toronto, Ontario, Canada. *Osteoarthritis Cartilage*. 2019;27(Supp 1):S361–362. <https://doi.org/10.1016/j.joca.2019.02.777>
321. Ho M, Dibbern K, Willey M, Marsh JL, **Anderson DD**. 3D joint space width measures from weight bearing CT detect early joint changes after treatment of intra-articular fracture. International Workshop on Osteoarthritis Imaging, June 26–28, 2019, Prince Edward Island, Canada.
322. Segal NA, Ho M, Rabe KR, Nevitt MC, **Anderson DD**. 24-month responsiveness of tibiofemoral 3D joint space narrowing measured with standing CT in the MOST study. International Workshop on Osteoarthritis Imaging, June 26–28, 2019, Prince Edward Island, Canada.
323. **Anderson DD**. Engineering in Orthopedics: A stranger in a strange land. Old Capitol Kiwanis Club of Iowa City, July 1, 2019, Iowa City, Iowa.
324. Wilken J, Anderson K, **Anderson D**. Novel shoe testing system to guide custom orthotic device prescription. Blast Injury Conference 2019, July 11–12, 2019, London, United Kingdom.
325. **Anderson DD**, Tanner BD, Wilken JM. Integrating pathomechanical risk of post-traumatic OA into the treatment of intra-articular fractures. XXVII Congress of the International Society of Biomechanics (ISB 2019), held in conjunction with the 43rd Annual Meeting of the American Society of Biomechanics (ASB 2019), July 31–August 4, 2019, Calgary, Canada.
326. Dibbern KN, McKinley TO, Marsh JL, **Anderson DD**. The relationship between acute intra-articular fracture severity and the risk of post-traumatic osteoarthritis. XXVII Congress of the International Society of Biomechanics (ISB 2019), held in conjunction with the 43rd Annual Meeting of the American Society of Biomechanics (ASB 2019), July 31–August 4, 2019, Calgary, Canada.
327. Wilken JM, Anderson K, **Anderson DD**. Characterization of a novel shoe testing system for use in custom orthotic device evaluation. XXVII Congress of the International Society of Biomechanics (ISB2019), held in conjunction with the 43rd Annual Meeting of the American Society of Biomechanics (ASB2019), July 31–August 4, 2019, Calgary, Canada.
328. Wilken JM, Anderson KM, **Anderson DD**. Characterization of a novel shoe testing approach for use in custom orthotic device evaluation. 2019 Military Health System Research Symposium, August 19–22, 2019, Kissimmee, Florida.
329. Willey MC, Compton J, **Anderson DD**, Kleweno C, Agel J, Scott E, Bui G, Marsh JL. Weightbearing CT scan after pilon fracture fixation demonstrates significant early joint space narrowing. 2019 Military Health System Research Symposium, August 19–22, 2019, Kissimmee, Florida.

330. Willey M, Compton J, **Anderson DD**, Kleweno C, Agel J, Scott E, Bui G, Marsh JL. Weightbearing CT scan after pilon fracture fixation demonstrates significant early joint space narrowing. 35th Annual Meeting of the Orthopaedic Trauma Association, September 25-28, 2019, Denver, Colorado.
331. Dibbern KN, Engelken M, Thomas-Aitken Holly D, Holland T, Willey MC, Marsh JL, **Anderson DD**. Objective mechanical measures predict post-traumatic OA risk after intra-articular fracture of the acetabulum. 66th Annual Meeting of the Orthopaedic Research Society, February 8–11, 2020, Phoenix, Arizona.
332. Dibbern KN, Rao K, Day M, Marsh JL, **Anderson DD**. Objective mechanical measures predict post-traumatic OA risk after intra-articular fracture of the calcaneus. 66th Annual Meeting of the Orthopaedic Research Society, February 8–11, 2020, Phoenix, Arizona.
333. Dibbern KN, Willey MC, Marsh JL, **Anderson DD**. Objective mechanical measures predict post-traumatic OA risk after intra-articular fracture of the tibial plafond. 66th Annual Meeting of the Orthopaedic Research Society, February 8–11, 2020, Phoenix, Arizona. **New Investigator Recognition Award finalist.**
334. Ho M, Segal NA, Bergin J, Dibbern KN, **Anderson DD**. Test-retest reliability of tibiofemoral 3D joint space width distribution from weight bearing CT. 66th Annual Meeting of the Orthopaedic Research Society, February 8–11, 2020, Phoenix, Arizona.
335. McFadden E, Ho M, Dibbern K, Willey M, Agel J, Kleweno C, Haller J, Higgins T, Marsh JL, **Anderson DD**. 3D joint space width from weight bearing CT detects progressive narrowing after tibial pilon fractures. 66th Annual Meeting of the Orthopaedic Research Society, February 8–11, 2020, Phoenix, Arizona.
336. Tanner BD, Wilken JM, Anderson KM, **Anderson DD**. A system for prescribing custom orthoses to reduce joint contact stress after intra-articular fracture. 66th Annual Meeting of the Orthopaedic Research Society, February 8–11, 2020, Phoenix, Arizona.
337. Hill J, Thomas G, Karam M, **Anderson DD**. VR arthroscopic simulation training and financial return. 2020 American College of Surgeons and Engineers: A Dialogue on Surgical Simulation, March 11, 2020, Chicago, Illinois. (Conference canceled due to COVID-19).
338. Long S, Mattioli D, Connor E, Thomas GW, **Anderson DD**, Kowalski H. Establishing performance metrics on pinning pediatric elbow fractures: From simulation to the operating room. 2020 American College of Surgeons and Engineers: A Dialogue on Surgical Simulation, March 11, 2020, Chicago, Illinois. (Conference canceled due to COVID-19).
339. Dibbern KN, Rao K, Day M, Willey MC, Marsh JL, **Anderson DD**. Objective mechanical measures predict post-traumatic OA risk after intra-articular fracture of the hindfoot and ankle. International Foot & Ankle Biomechanics Meeting, April 5–8, 2020, Sao Paulo, Brazil. (Conference canceled due to COVID-19).
340. McFadden E, Ho M, Dibbern K, Willey M, Agel J, Kleweno C, Haller J, Higgins T, Marsh JL, **Anderson DD**. 3D joint space width from weight bearing CT detects progressive narrowing after tibial pilon fractures. International Foot & Ankle Biomechanics Meeting, April 5–8, 2020, Sao Paulo, Brazil. (Conference canceled due to COVID-19).
341. Tanner BD, Wilken JM, Anderson KM, **Anderson DD**. Prescribing custom dynamic orthoses to reduce risk of post-traumatic OA after tibial pilon fractures. International Foot & Ankle Biomechanics Meeting, April 5–8, 2020, Sao Paulo, Brazil. (Conference canceled due to COVID-19).
342. Johnson Z, Long S, Thomas GW, **Anderson DD**. A pediatric supracondylar humerus fracture wire navigation simulator. 2020 Design of Medical Devices Conference, April 6–9, 2020, Minneapolis, Minnesota. (Conference canceled due to COVID-19).
343. Kowalski H, Thomas GW, Long S, Connor E, Karam MD, Marsh JL, **Anderson DD**. The design and validation of a wire navigation simulator for pediatric supracondylar humerus fractures. 2020 Annual Meeting of the Pediatric Orthopaedic Society of North America, May 13–16, 2020, San Diego, California. (Conference canceled due to COVID-19).
344. Karam MD, Long S, **Anderson DD**, Thomas GW. Trauma fellows set wire navigation competency benchmarks. Virtual Summer 2020 CORD/American Orthopaedic Association Annual Leadership Meeting, June 12–13, 2020, Online.
345. McFadden E, Ho M, Dibbern K, Willey M, Agel J, Kleweno C, Haller J, Higgins T, Marsh JL, **Anderson DD**. Weight bearing CT detects early changes in 3D joint space width after tibial pilon fractures. Virtual 44th Annual Meeting of the American Society of Biomechanics, August 4–7, 2020, Online.

346. Tanner B, Anderson K, Wilken J, Corlett M, **Anderson DD**. Custom orthosis prescription is needed to reliably reduce harmful contact stress after intra-articular fracture. Virtual 44th Annual Meeting of the American Society of Biomechanics, August 4–7, 2020, Online.
347. Segal NA, Ho M, Cheng H, He J, Lynch JA, Nevitt MC, **Anderson DD**. Sub-regional tibiofemoral 3D joint space width measured on weight-bearing CT is highly responsive to change over 24-months. International Workshop on Osteoarthritis Imaging. September 9–11, 2020, Salzburg, Austria.
348. Segal NA, Ho M, Cheng H, He J, Duryea J, Lynch JA, Nevitt MC, **Anderson DD**. Comparison of 24-month responsiveness to change between tibiofemoral 3D JSWx on weight-bearing CT with radiographic 2D JSWx. International Workshop on Osteoarthritis Imaging. September 9–11, 2020, Salzburg, Austria.
349. de Cesar Netto C, Lintz F, Goetz JE, Dibbern K, Giarola IC, Godoy-Santos AL, Guss D, Femino JE, **Anderson DD**, DiGiovanni CW. Automatic 3D volumetric analysis of the distal tibiofibular syndesmotomotic incisura. A case-control study of subtle chronic syndesmotomotic instability. AOFAS Annual Meeting 2020, September 9–12, San Antonio, Texas. *Foot & Ankle Orthopaedics*. 2020;5(4):2473011420S00190.
350. Tanner B, Anderson K, Wilken J, Corlett M, **Anderson DD**. Custom orthosis prescription is needed to reliably reduce harmful contact stress after intra-articular fracture. 2020 Osteoarthritis Clinical Studies (OACS) Conference. December 7–9, 2020, Online.
351. McFadden E, Ho M, Dibbern K, Willey M, Agel J, Kleweno C, Haller J, Higgins T, Marsh JL, **Anderson DD**. Weight bearing CT detects early changes in 3D joint space width after tibial pilon fractures consistent with post-traumatic OA. 2020 Osteoarthritis Clinical Studies (OACS) Conference. December 7–9, 2020, Online.
352. Segal NA, Roemer F, Guermazi A, Lynch J, **Anderson DD**, He J, Nevitt MC, for the MOST Study Group. WBCT provides an increased rate of detection of meniscal extrusion compared with MRI in adults with or at increased risk for knee osteoarthritis. 2nd International WBCT Society Virtual Meeting, 16 January 2021, Online.
353. Corlett MA, Anderson KM, Tanner BD, Silverman AK, Wilken JM, **Anderson DD**. Musculoskeletal modeling for prescribing a custom dynamic orthosis that mitigates post-traumatic osteoarthritis risk after intra-articular fracture. 67th Annual Meeting of the Orthopaedic Research Society, February 12–16, 2021, Online.
354. Dibbern KN, Smith HJ, **Anderson DD**, McMurry T, Spratley EM. Advanced risk analyses of post-traumatic osteoarthritis development based on objective measures of injury severity indicate differences in injury tolerance across joints. 67th Annual Meeting of the Orthopaedic Research Society, February 12–16, 2021, Online.
355. McFadden E, Dibbern K, Willey M, Agel J, Kleweno C, Haller J, Higgins T, Marsh JL, **Anderson DD**. Weight bearing CT detects early changes in 3D joint space width after tibial pilon fractures consistent with post-traumatic osteoarthritis. 67th Annual Meeting of the Orthopaedic Research Society, February 12–16, 2021, Online.
356. Segal NA, Ho M, Cheng H, He J, Lynch JA, Nevitt MC, **Anderson DD**. Tibiofemoral 3D joint space width measures from weight bearing CT are highly responsive to changes over 24 months in knees from the Multicenter Osteoarthritis Study. 67th Annual Meeting of the Orthopaedic Research Society, February 12–16, 2021, Online.
357. Mattioli D, Thomas GW, Connor E, Long SA, Kowalski HR, **Anderson DD**. Toward automated objective scoring of orthopedic trauma fixation performance from fluoroscopy. 2021 Healthcare Systems Process Improvement Conference, February 24-26, 2021, Orlando, Florida.
358. Hill J, Long S, Williams E, Thomas G, Bechtold J, **Anderson DD**. Developing a wire navigation simulator for pedicle screw placement in minimally invasive transforaminal lumbar interbody fusion. 2021 Design of Medical Devices Conference, April 12–16, 2021, Minneapolis, Minnesota.
359. Williams E, Long S, Tatum M, **Anderson DD**, Thomas G. Designing a 3D printed bone simulant for wire navigation training. 2021 Design of Medical Devices Conference, April 12–16, 2021, Minneapolis, Minnesota.
360. Corlett MA, Anderson KM, Silverman AK, **Anderson DD**, Wilken JM. Lightening the load: The effect of carbon fiber bracing on ankle muscle and joint forces. 47th Annual Meeting & Scientific Symposium of the American Academy of Orthotists and Prosthetists, May 4–7, 2021, New Orleans, Louisiana.
361. Karam MD, Long S, Thomas GW, Connor E, Kowalski H, Marsh JL, **Anderson DD**. Testing the validity of a novel simulator for training pediatric supracondylar elbow fractures. 2021 CORD/American Orthopaedic Association Annual Leadership Meeting. June 8–12, 2021, Albuquerque, New Mexico.
362. Karam MD, Long S, Thomas GW, Marsh JL, **Anderson DD**. Exploring the generalizability of wire navigation skills. 2021 CORD/American Orthopaedic Association Annual Leadership Meeting. June 8–12, 2021, Albuquerque, New Mexico.

363. Mattioli D, Thomas GW, Long SA, Tatum M, Karam MD, **Anderson DD**. Discriminating wire navigation performance using quantitative objective analysis of intra-operative fluoroscopy. 12th International Conference on Applied Human Factors and Ergonomics (AHFE 2021), July 25–29, 2021, Manhattan, New York.
364. de Cesar Netto C, Mansur NS, Tazegul T, Lalevee M, Lee HY, Behrens A, Lintz F, Godoy-Santos AL, Dibbern KN, **Anderson DD**. Implant related artifact around metallic and bio-integrative screws: A CT scan 3D Hounsfield unit. American Orthopedic Foot and Ankle Society (AOFAS) Annual Meeting, September 22–25, 2021, Charlotte, North Carolina.
365. De Cesar Netto C, Mansur NS, Lalevee M, Lintz F, Buedts K, Goldberg AJ, Deland JT, Femino JE, **Anderson DD**, Dibbern KN. Surgical correction of peritalar subluxation and patient reported outcomes: A prospective comparative outcome study in flexible progressive collapsing foot deformity. American Orthopedic Foot and Ankle Society (AOFAS) Annual Meeting, September 22–25, 2021, Charlotte, North Carolina.
366. Cychosz C, Mansur NS, Lalevee M, Lorentzen WJ, Auch E, Glass N, Phisitkul P, Femino JE, **Anderson DD**, de Cesar Netto C. What are the injuries that lead to post-traumatic ankle osteoarthritis? A long-term retrospective analysis of 533 patients. American Orthopedic Foot and Ankle Society (AOFAS) Annual Meeting, September 22–25, 2021, Charlotte, North Carolina.
367. de Cesar Netto C, Lalevee M, Shamrock AG, Ahrenholz SJ, Lintz F, Barg A, Femino JE, **Anderson DD**, Dibbern KN, Mansur NS. Diagnostic accuracy of weightbearing CT in detecting subtle chronic syndesmotic instability: A prospective comparative study. American Orthopedic Foot and Ankle Society (AOFAS) Annual Meeting, September 22–25, 2021, Charlotte, North Carolina.
368. Dibbern KN, Vivtcharenko V, Behrens A, Lalevee M, Mansur NS, **Anderson DD**, Goldberg AJ, Barg A, Ellis SJ, de Cesar Netto C. Three-dimensional distance maps of ankle and syndesmotic joints from weightbearing CT in progressive collapsing foot deformity: A retrospective case-control study. American Orthopedic Foot and Ankle Society (AOFAS) Annual Meeting, September 22–25, 2021, Charlotte, North Carolina.
369. Dibbern KN, Behrens A, Lalevee M, Ehret A, Mansur NS, **Anderson DD**, Femino JE, Lintz F, Bernasconi A, de Cesar Netto C. Three-dimensional coverage maps in the assessment of Chopart subluxation in progressive collapsing foot deformity. American Orthopedic Foot and Ankle Society (AOFAS) Annual Meeting, September 22–25, 2021, Charlotte, North Carolina.
370. Linderman SE, Johnson JE, **Anderson DD**, Patterson BM. Influence of subscapularis stiffness and glenosphere lateralization on impingement-free range of motion, joint torque, and subluxation risk in reverse shoulder arthroplasty. 38th Annual Meeting of the Mid-America Orthopaedic Association, September 29–October 3, 2021, Amelia Island, Florida.
371. Patterson BM, Linderman SE, Johnson JE, **Anderson DD**. Influence of subscapularis stiffness and glenosphere lateralization on reverse shoulder arthroplasty pre- and post-impingement mechanics. Annual Meeting of the American Shoulder and Elbow Surgeons, December 15–17, 2021, Tampa, Florida.
372. Anderson KM, Corlett MA, **Anderson DD**, Wilken JM. Initial investigation of carbon fiber orthosis use to prevent ankle post-traumatic arthritis. American Physical Therapy Association 2022 Combined Sections Meeting. February 2-5, 2022, San Antonio, TX.
373. Anderson KM, Corlett MA, **Anderson DD**, Wilken JM. Effects of carbon fiber ankle foot orthosis use to prevent post-traumatic ankle osteoarthritis. 48th Academy Annual Meeting and Scientific Symposium of the American Academy of Orthotists and Prosthetists. March 2–5, 2022, Atlanta, GA.
374. Smith H, Willey M, Agel J, Kleweno C, Olsen Z, Haller J, Marsh JL, **Anderson DD**. Tibial pilon fracture severity correlates with 3D joint space width narrowing from weight bearing CT. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022, Tampa FL.
375. Carlson MR, Willey M, Agel J, Kleweno C, Olsen Z, Haller H, Higgins T, Marsh JL, **Anderson DD**. Contact stress-time over-exposure after tibial pilon fracture correlates with 18-month changes in 3D joint space width measured from weight bearing CT. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022, Tampa FL.
376. McFadden E, Dibbern K, Segal NA, Lynch JA, Felson DT, Anderson DD. Fully automated 3D joint space width analysis of the tibiofemoral joint from weight bearing CT. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022, Tampa FL.
377. Kosonen JP, Eskelinen AS, Orozco GA, **Anderson DD**, Grodzinsky AJ, Tanska P, Korhonen RK. Reduction of pro-inflammatory cytokine activity results in proteoglycan content recovery in a computational model of injured

- articular cartilage implementing cytokines and reactive oxygen species. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022, Tampa FL.
378. Fink DE, Smith H, Jacobs CA, Olsen ZM, Haller J, **Anderson DD**. The relationship between intra-articular fracture severity and the synovial joint inflammatory response. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022.
 379. Jacobs C, Olsen ZM, Marchand L, Kraus V, **Anderson DD**, Haller J. The inflammatype: A patient phenotype characterized by a dysregulated inflammatory response after lower extremity fracture. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022, Tampa FL.
 380. Dibbern KN, Behrens A, Lalevee M, Mansur NB, Carvalho K, **Anderson DD**, De Cesar Netto C. Three-Dimensional Distance Maps of Ankle and Syndesmotic Joints from Weightbearing CT in Progressive Collapsing Foot Deformity: A Retrospective Case-Control Study. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022, Tampa, Florida. [received **New Investigator Recognition Award**].
 381. Carvalho K, Mansur NSB, Dibbern K, Walt J, **Anderson DD**, Lalevee M, de Cesar Netto C. Comparison between semi-automatic 3D weight-bearing CT measurements with manually performed measurements for hallux valgus. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022, Tampa FL.
 382. Tazegul T, Mansur NSB, Dibbern K, Lalevee M, Carvalho K, **Anderson DD**, de Cesar Netto C. Quantifying ankle arthritis using a 3D Hounsfield Unit weight-bearing computed tomography algorithm. 68th Annual Meeting of the Orthopaedic Research Society, February 4–8, 2022, Tampa FL.
 383. Smith H, Dibbern K, Andrew M, Welhaven A, Allareddy V, **Anderson DD**, Shin K. Validation of fracture energy assessment from cone beam CT. 69th Annual Meeting of the Iowa Section of the American Association for Dental, Oral, and Craniofacial Research. February 15, 2022, Iowa City, IA
 384. Rölfing JD, Long S, Abood A, Connor E, Wagstrom E, Thomas G, **Anderson DD**, Kowalski H. Construct validity of a novel simulator for pinning of supracondylar humeral fracture. 40th Annual Meeting of the European Paediatric Orthopaedic Society (EPOS), April 6–9, 2022, Copenhagen, Denmark.
 385. McFadden E, Dibbern K, Segal NA, Lynch JA, Felson DT, **Anderson DD**. Fully automated 3D joint space width analysis of the tibiofemoral joint from weight bearing CT. 2022 OARSI World Congress on Osteoarthritis, April 7–10, 2022, Berlin, Germany
 386. Fink DE, Smith H, Jacobs CA, Olsen ZM, Haller J, **Anderson DD**. Intra-articular fracture severity influences the synovial joint inflammatory response. 2022 OARSI World Congress on Osteoarthritis, April 7–10, 2022, Berlin, Germany
 387. Kowalski H, Connor E, Thomas G, Long S, **Anderson DD**. Pediatric elbow pinning simulator improves early stage resident performance. 2022 POSNA Annual Meeting. May 11–14, 2022, Vancouver, BC, Canada.
 388. Kowalski H, Connor E, Wagstrom E, Abood A, Rölfing J, Thomas G, Long S, **Anderson DD**. A multi-institutional study establishing construct validity of a novel pediatric elbow pinning simulator. 2022 POSNA Annual Meeting. May 11–14, 2022, Vancouver, BC, Canada.
 389. Lawler E, Long S, Elkins J, Hogue M, Duchman K, **Anderson DD**, Karam M (2022). Developing a surgical skills week checkpoint for mid-level residents. University of Iowa Hospitals and Clinics Office of Graduate Medical Education Leadership Symposium, May 20, 2022. Iowa City.
 390. Kowalski H, Connor E, Long S, Thomas G, **Anderson DD**. (2022). Pediatric elbow pinning simulator improves early-stage resident performance. University of Iowa Hospitals and Clinics Office of Graduate Medical Education Leadership Symposium, May 20, 2022. Iowa City.
 391. de Cesar Netto C, Barbachan-Mansur N, Lalevee M, de Carvalho KA, **Anderson DD**, Dibbern K. Surgical correction of peritalar subluxation improves patient reported outcomes in progressive collapsing foot deformity. A prospective comparative study. 74th Annual Meeting of The Association of Bone and Joint Surgeons, June 1–5, 2022, Venice, Italy.
 392. Korhonen RK, **Anderson DD**. Perspective talk: Translational computational studies toward preventing post-traumatic osteoarthritis after joint injury. 27th Congress of the European Society of Biomechanics. June 26–29, 2022, Porto, Portugal.
 393. Anderson K, Corlett M, Wilken JM, **Anderson DD**. Using carbon fiber custom dynamic orthoses to prevent post-traumatic ankle osteoarthritis. 27th Congress of the European Society of Biomechanics. June 26–29, 2022, Porto, Portugal.

394. Smith H, Willey M, Agel J, Kleweno C, Olsen Z, Haller J, Marsh JL, **Anderson DD**. Tibial pilon fracture severity correlates with early 3D joint space width narrowing from weight bearing CT. 9th World Congress of Biomechanics, July 10–14, 2022, Taipei, Taiwan.
395. McFadden E, Dibbern K, Segal NA, Lynch JA, Felson DT, **Anderson DD**. Fully automated 3D joint space width analysis of the tibiofemoral joint from weight bearing CT. 9th World Congress of Biomechanics, July 10–14, 2022, Taipei, Taiwan.
396. Kosonen JP, Eskelinen AS, Orozco GA, **Anderson DD**, Grodzinsky AJ, Korhonen RK, Tanska P. Simulating early post-traumatic articular cartilage damage mechanisms via damage-associated molecular patterns and oxidative stress. 9th World Congress of Biomechanics, July 10–14, 2022, Taipei, Taiwan.
397. Johnson JE, Patterson BM, **Anderson DD**. Influence of implant design, placement, and soft tissue restraint upon shoulder mechanics after reverse shoulder arthroplasty. 15th World Congress on Computational Mechanics. July 31–August 5, 2022, Yokohama, Japan.
398. Anderson KM, Williamson L, Corlett MA, **Anderson DD**, Wilken JM. Using custom dynamic orthoses to prevent post-traumatic ankle osteoarthritis. North American Congress on Biomechanics (NACOB 2022), August 21–25, 2022, Ottawa, Ontario, Canada
399. Koshyk A, Sparks HD, Scott WM, **Anderson DD**, Edwards WB. Using discrete element analysis to compute contact stress in the equine metacarpophalangeal joint. Calgary International Equine Symposium, September 8-9, 2022, Calgary, Alberta, Canada.
400. Haller J, Fink DE, Smith H, Olsen ZM, Jacobs CA, **Anderson DD**. The relationship between intra-articular fracture energy and a patient's inflammatory response. 2022 OTA Basic Science Focus Forum, October 12–13, 2022, Tampa, Florida.
401. Rooney P, Haller J, Kleweno C, Glass N, Davison J, Miller A, **Anderson DD**, Marsh JL, Willey M. Syndesmosis malposition assessed on weight bearing CT is common after operative fixation of intra-articular distal tibia plafond fracture. 2022 OTA Annual Meeting, October 12–13, 2022, Tampa, Florida.
402. Rölfing J, Long S, Abood A, Connor E, Wagstrom E, Thomas G, **Anderson DD**, Kowalski H. Construct validity of a novel simulator for pinning of supracondylar humeral fractures. 2022 Danish Orthopaedic Society Annual Congress. November 16–18, 2022, Bredsten, Denmark.
403. Mouser B, **Anderson DD**, de Cesar Netto C, Wilken J. Contact stress alterations in patients with "simple" low-energy rotational ankle fractures. 69th Annual Meeting of the Orthopaedic Research Society, February 10–14, 2023, Dallas, TX.
404. Johnson JE, Clarke GA, de Cesar Netto C, **Anderson DD**. Parametric evaluation of fixation design features in total ankle replacement using finite element modeling. 69th Annual Meeting of the Orthopaedic Research Society, February 10–14, 2023, Dallas, TX.
405. Strand K, Esrafilian A, Williamson L, Wilken JM, **Anderson DD**. Integrating elastic foundation ankle joint contact in musculoskeletal dynamics simulation. 69th Annual Meeting of the Orthopaedic Research Society, February 10–14, 2023, Dallas, TX.
406. Strebalek H, de Cesar Netto C, **Anderson DD**. Defining normal articular characteristics of the primary joints of the foot and ankle: A 3D Hounsfield algorithm weight bearing CT study. 69th Annual Meeting of the Orthopaedic Research Society, February 10–14, 2023, Dallas, TX.
407. Jun B-J, Lartey R, Gaj S, Li M, Marquez T, **Anderson DD**, Winalski CS, Jones MH, Li X. Complementary in vivo quantitative characterization of knee osteoarthritis by integrating MRI and cone-beam CT. 69th Annual Meeting of the Orthopaedic Research Society, February 11–14, 2023, Dallas, TX.
408. Tatum M, Thomas GW, **Anderson DD**. Design and evaluation of a system for CT-free volume reconstruction from intra-operative fluoroscopy for navigation in orthopedic surgery. 2023 Design of Medical Devices Conference, April 17–19, 2023, Minneapolis, Minnesota.
409. Williams E, Thomas GW, Long S, **Anderson DD**, Karam MD. Discovering patterns in orthopedic surgical resident behavior during a cephalomedullary nail procedure with a wire navigation simulator. 2023 Design of Medical Devices Conference, April 17–19, 2023, Minneapolis, Minnesota.
410. Tatum M, Long S, **Anderson DD**, Thomas GW. Creating a fracture reduction and wire navigation simulator for orthopaedic skills training and assessment. 2023 Design of Medical Devices Conference, April 17–19, 2023, Minneapolis, Minnesota.

411. de Cesar Netto C, **Anderson DD**, Lintz F, Deland JT, Carvalho K, Dibbern K, Lalevee M, Mansur NSB, Ellis S. Surgical correction of peritalar subluxation and subtalar joint articular coverage improves patient-reported outcomes in progressive collapsing foot deformity. AAOS 2023 Annual Meeting, March 7–11, 2023, Las Vegas, Nevada.
412. Johnson JE, Bozoghlian MF, Patterson BM, **Anderson DD**. Finite element analysis of acromial fracture risk after reverse shoulder arthroplasty. 2023 American Society of Biomechanics, August 8–11, 2023, Knoxville, Tennessee.
413. Clarke GA, Johnson JE, de Cesar Netto C, **Anderson DD**. Dependence of total ankle tibial component stability upon bone density. 2023 American Society of Biomechanics, August 8–11, 2023, Knoxville, Tennessee.
414. Wilken JM, Magdziarz S, Anderson KM, Pacha MS, **Anderson DD**. Effects of custom dynamic orthosis posterior strut stiffness on foot loading. 2023 American Society of Biomechanics, August 8–11, 2023, Knoxville, Tennessee.
415. Wilken JM, Magdziarz S, Anderson KM, Pacha MS, **Anderson DD**. Effects of custom dynamic orthosis proximal cuff design on foot loading. 2023 American Society of Biomechanics, August 8–11, 2023, Knoxville, Tennessee.
416. Marquez TC, Ortiz S, Wolf BR, **Anderson DD**. Utilizing weight bearing CT to evaluate PTOA risk after ACL reconstruction. 2023 American Society of Biomechanics, August 8–11, 2023, Knoxville, Tennessee.
417. Talaski G, Dibbern K, Mallavarapu V, Jasper R; Schmidt E, Behrens A, Kim KC, Carvalho KAM, Mansur N, **Anderson DD**, de Cesar Netto C. The impact of 3D foot alignment on detection of distal tibiofibular syndesmotoc widening after injury using comparative contralateral distance mapping. AOFAS 2023 Annual Meeting, September 20-23, 2023, Louisville, Kentucky.
418. Stebral HJ, Tazegul T, Jasper R, Mallavarapu V, Schmidt E, Carvalho KAM, Mansur N, Chrea B, **Anderson DD**, de Cesar Netto C. Defining normal articular characteristics of the primary joints of the foot and ankle: A 3D Hounsfield algorithm weight bearing CT study. AOFAS 2023 Annual Meeting, September 20-23, 2023, Louisville, Kentucky.
419. Schmidt E, Talaski GM, Fayed AM, Jones MT, Carvalho KAM, **Anderson DD**, Mansur N, de Cesar Netto C. Comparing symptomatic and asymptomatic flatfeet using known markers of progressive collapsing foot deformity (PCFD): A case control study. AOFAS 2023 Annual Meeting, September 20-23, 2023, Louisville, Kentucky.
420. Schmidt E, Talaski GM, Jasper R, Mallavarapu V, Carvalho KAM, **Anderson DD**, Fayed AM, Mansur N, de Cesar Netto C. Three-dimensional distance map comparisons between asymptomatic and symptomatic progressive collapsing foot deformity (PCFD) . AOFAS 2023 Annual Meeting, September 20-23, 2023, Louisville, Kentucky.
421. Behrens A, Dibbern K, **Anderson DD**, Talaski G, Carvalho KAM, Mansur N, de Cesar Netto C. Objective analysis of regional tibiotalar joint changes in ankle osteoarthritis assessed by semi-automated 3D distance mapping. AOFAS 2023 Annual Meeting, September 20-23, 2023, Louisville, Kentucky.
422. Clarke GA, Johnson JE, de Cesar Netto C, **Anderson DD**. Dependence of total ankle tibial baseplate stability upon bone density. AOFAS 2023 Annual Meeting, September 20-23, 2023, Louisville, Kentucky.
423. Clarke GA, Johnson JE, de Cesar Netto C, **Anderson DD**. Dependence of total ankle tibial baseplate stability upon device fixation features. AOFAS 2023 Annual Meeting, September 20-23, 2023, Louisville, Kentucky.
424. Marquez TC, Hulsebus S, Ortiz S, Wolf B, Anderson DD. Utilizing weight bearing CT to evaluate osteoarthritis development early after ACL reconstruction. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
425. Meng C, Marquez TC, Ortiz S, Wolf B, Anderson DD. Differences in tibiofemoral joint space width distributions in flexed vs. extended weight bearing CT scans. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
426. Larson E, Marquez TC, Anderson DD. Developing robust early measures of tibiofemoral joint health following ACL reconstruction. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
427. Williamson LA, Brouillette M, Miller T, Goetz JE, Wilken J, Anderson DD. Influence of custom dynamic orthoses on tibiotalar joint reaction force: a cadaveric study. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
428. Kosonen JP, Eskelinen ASA, Orozco GA, Goetz JE, Coleman MC, Grodzinsky AJ, Anderson DD, Tanska P, Korhonen RK. Positive effects of acute n-acetylcysteine treatment simulated by an in silico model with overloading

- induced cell damage and recovery mechanisms. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
429. Benna J, Peterson A, Arnholt A, Anderson DD, Soltanolkotabi M, Haller J, Lenz A. Analysis of post-traumatic osteoarthritis and clinical outcomes in post-operative pilon fracture patients: a multivariate analysis. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
 430. Peterson AC, Benna JC, Anderson DD, Soltanolkotabi M, Haller J, Lenz A. Longitudinal statistical shape model analysis of post-traumatic osteoarthritis development after tibial plafond fractures. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
 431. Talaski GM, Schmidt E, Behrens A, Anastasio A, Anderson DD, Elkins J, Wu K, Carvalho K, de Cesar Netto C. Characterizing three dimensional alignment of the hip, knee, and ankle and foot under physiological upright load. A weightbearing computed topography study in arthritic joints and healthy controls. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
 432. Jun B-J, Lartey R, Peters JR, Marquez T, **Anderson DD**, Winalski CS, Spindler K, Li X. Combined MR and weight-bearing CT imaging for in vivo knee joint assessment in functional poses. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
 433. Johnson JE, Clarke GA, de Cesar Netto C, **Anderson DD**. Computational evaluation of bone density and fixation feature design influence on total ankle micromotions. 70th Annual Meeting of the Orthopaedic Research Society, February 2–6, 2024, Long Beach, CA.
 434. Fayed AM, de Cesar Netto C, **Anderson DD**, Schmidt E, Talaski GM, Carvalho K, Mansur NS. Comparing symptomatic and asymptomatic flatfeet using known markers of Progressive Collapsing Foot Deformity (PCFD): A prospective case control study. 2024 Annual Meeting American Academy of Orthopaedic Surgeons, February 12–16, 2024, San Francisco, CA.
 435. Fayed AM, de Cesar Netto C, **Anderson DD**, Schmidt E, Talaski GM, Carvalho K, Mansur NS, Jasper R, Mallavarapu V. Three-dimensional distance mapping comparisons between asymptomatic and symptomatic Progressive Collapsing Foot Deformity (PCFD). 2024 Annual Meeting American Academy of Orthopaedic Surgeons, February 12–16, 2024, San Francisco, CA.
 436. Patterson B, Wixted C, **Anderson DD**, Johnson JE, Bozoghlian MF. Increased deltoid and acromial stress with glenoid lateralization and onlay humeral stem constructs in reverse shoulder arthroplasty. 2024 Annual Meeting American Academy of Orthopaedic Surgeons, February 12–16, 2024, San Francisco, CA.
 437. Marquez TC, Hulsebus S, Ortiz S, Wolf B, **Anderson DD**. Utilizing weight bearing CT to evaluate osteoarthritis development early after ACL reconstruction. 2024 OARSI World Congress on Osteoarthritis, April 19–21, 2024, Vienna, Austria.
 438. Williamson LA, Brouillette M, Miller T, Goetz J, Wilken J, **Anderson DD**. Using custom dynamic orthoses to mitigate post-traumatic OA risk by reducing tibiotalar contact stress: A cadaveric study. 2024 OARSI World Congress on Osteoarthritis, April 19–21, 2024, Vienna, Austria.

Letters to the Editor

1. **Anderson DD**. Effects of sectioning of the posterior cruciate ligament and the posterolateral complex on the articular contact pressures within the knee. *J Bone Joint Surg Am*. 1995 Apr;77(4):649. doi.org/10.2106/00004623-199504000-00020. PMID: 7713983.
2. Hale JE, **Anderson DD**. Contact pressures at osteochondral donor sites in the knee. *Am J Sports Med*. 27(2):267–268, 1999. doi.org/10.1177/03635465990270022801.
3. **Anderson DD**, Guanche CA. The effect of reconstruction of the medial patellofemoral ligament on patellar tracking. *Am J Sports Med*. 28(6):920–921, 2000. doi.org/10.1177/03635465000280062801.
4. Rölfing JD, Kold S, **Anderson DD**, Putnam MD, Adams J, Paltved C, Østgaard SE, Bechtold JE. Measuring surgical skills in simulation-based training. *J Am Acad Orthop Surg*, 2018; 26(7):e156-e157. doi.org/10.5435/JAAOS-D-17-00875

GRANT SUPPORT / RESEARCH FUNDING / CONTRACTS

Currently Funded Grants

- 2021 – 2024 Arthritis Foundation
3D Joint Space Width from Weight Bearing CT as an Imaging Biomarker of PTOA
\$928,249 Total Costs (Co-Principal Investigator)
- 2022 – 2024 Arthritis Foundation / Cleveland Clinic Foundation
Injection after Arthroscopic Partial Meniscectomy
Site Principal Investigator - \$99,859 subaward
- 2021 – 2024 Arthritis Foundation
Utilizing WBCT to Evaluate PTOA Risk After ACL Reconstruction
\$300,000 Total Costs (Co-Principal Investigator)
- 2021 – 2024 **National Science Foundation**
REU Site: Computational Bioengineering
\$388,427 Total Costs (Faculty REU Mentor)
- 2022 – 2024 Paragon 28, Inc.
Influence of Tibial Baseplate Features in Total Ankle Replacement on Micromotion and Subchondral Bone Stresses: A Finite Element Analysis.
\$107,913 Total Costs (Principal Investigator)
- 2022 – 2024 Stryker Orthopedics
Mechanical Tradeoffs in Implant Design, Implantation Choices, Impingement-Free Range of Motion, Joint Stability, Muscle Force Requirements, and Subluxation Risk After Reverse Shoulder Arthroplasty with the Stryker/Tornier Perform System.
\$166,770 Total Costs (Co-Principal Investigator)
- 2022 – 2027 **Agency for Healthcare Research and Quality 1 R18 HS028778-01**
Integrating Next Generation Simulator Training and Operating Room Performance Assessment into Orthopedic Residency Programs
\$1,853,257 Total Costs (Principal Investigator)
- 2023 – 2028 **National Institutes of Health/NIA 1U19AG076471**
Novel Insights into Osteoarthritis, Pain and Function: MOST 4
\$9,860,390 Total Costs on University of Iowa Subaward (Co-Investigator)
- 2023 – 2027 Arthritis Foundation
University of Iowa Clinical Trial Unit for the OACTN
\$400,000 Total Costs (Principal Investigator)
- 2024 – 2026 Arthritis Foundation (Arthritis Foundation-AOFAS Ankle Arthritis Think Tank Grant)
Determining the Traumatic Origins of Ankle OA and the Time to Joint Degeneration
\$200,000 Total Costs (Principal Investigator)

Pending Grants

- 2024 – 2026 Orthopaedic Trauma Association
An Intra-Operative Biomechanical Guidance System for Mitigating PTOA Risk After Intra-Articular Fracture
\$50,000 Total Costs (Principal Investigator)

Completed Funded Grants

- 1990 – 1991 **National Institutes of Health Biomedical Research Support Grant**
A Three Dimensional Finite Element Analysis of the Distal Radius
\$8,070 (Principal Investigator)

- 1990 – 1991 Allegheny-Singer Research Institute
Contact Stress Distributions in Malreduced Intraarticular Distal Radius Fractures
\$5,000 (Investigator)
- 1990 – 1991 Allegheny-Singer Research Institute
Radiographic Evaluation of Acetabular Orientation in Total Hip Arthroplasty
\$5,000 (Investigator)
- 1991 Allegheny-Singer Research Institute
Pull-Out Strength of External Fixation Pins for Use in Distal Radius Fractures
\$5,000 (Investigator)
- 1991 – 1992 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
An Anatomic Study of Radial Stability in the Thumb Metacarpophalangeal Joint
\$5,000 (Investigator)
- 1992 – 1993 StelKast, Inc.
Biomechanical Investigation of the Flexural Rigidity of the Human Femur, and its Use in the Design of a Novel Femoral Component
\$12,000 (Principal Investigator)
- 1992 – 1993 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
In Vitro Evaluation of the Effect of Acetabular Orientation Upon Load Transfer in the Cadaver Pelvis
\$5,000 (Investigator)
- 1992 – 1993 Arthritis Foundation, Western Pennsylvania Chapter
Identification of Relevant Mechanical Parameters in Malreduced Intra-articular Distal Radius Fractures
\$10,500 (Principal Investigator)
- 1993 – 1994 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
Carpal Kinematics in Displaced Distal Radius Fractures
\$10,000 (Investigator)
- 1993 – 1994 Allegheny-Singer Research Institute
A Biomechanical Study of Cervical Spine Stabilization Comparing Wiring, Posterior A-O Plating and Anterior Locking Plates
\$9,283 (Investigator)
- 1993 – 1994 Allegheny-Singer Research Institute
A Biomechanical Analysis of Ulnar Nerve Transposition for Cubital Tunnel Syndrome
\$9,844 (Investigator)
- 1994 – 1995 Mt. Carmel Health
Effect of Intercondylar Notchplasty/Roofplasty on the Patellofemoral Articulation
\$4,825 (Investigator)
- 1994 – 1995 Allegheny-Singer Research Institute
Thumb Metacarpophalangeal Joint Ulnar Collateral Ligament Reconstruction
\$9,995 (Investigator)
- 1994 – 1996 **The Whitaker Foundation**
A Combined Experimental and Computational Approach to the Identification of Relevant Mechanical Parameters in Malreduced Intra-Articular Fractures of the Distal Radius
\$180,000 (Principal Investigator)
- 1994 – 1995 Allegheny-Singer Research Institute
An In Vitro Evaluation of the Effect of Acetabular Orientation Upon Load Transfer Through the Pelvis
\$129,429 (Principal Investigator)
- 1994 – 1995 Allegheny-Singer Research Institute
Determination of Forearm Kinematics During Axial Loading and Rotation using a Cadaveric Model
\$9,700 (Investigator)

- 1994 – 1995 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
A Computational Investigation of the Relationship Between Acetabular Component Orientation and Polyethylene Wear
\$5000 (Principal Investigator)
- 1994 – 1995 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
An In Vivo Evaluation of Thumb Motion Following Reconstructive Surgery
\$5,000 (Investigator)
- 1994 – 1995 Allegheny-Singer Research Institute
Correlation of Wrist Ligamentotaxis with Carpal Distraction in External Fixation: A Biomechanical / Roentgenographic Study
\$8,475 (Investigator)
- 1995 – 1999 **National Institutes of Health P41 RR006009** (through Pittsburgh Supercomputing Center)
Mechanical Factors in Malreduced Intra-Articular Fractures of the Distal Radius
313 Cray C90 Service Units = \$187,700 (Principal Investigator, subproject ID: 0091 and 0138)
- 1995 – 1996 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
The Effect of Residual Stresses on Cartilage Mechanics -- A Computational Study
\$5,000 (Principal Investigator)
- 1995 – 1996 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
Rapid Prototype Modeling for Three-dimensional Photoelastic Stress Analysis in Biomechanics
\$5,000 (Investigator)
- 1995 – 1996 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
An implantable prosthesis for restoration of elbow flexion
\$5,000 (Investigator)
- 1995 – 1996 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
Bracing in the ACL-deficient knee: What benefit does it provide?
\$5,000 (Investigator)
- 1995 – 1996 Allegheny-Singer Research Institute
Spinal Fusion in the Rabbit: Augmentation by Insulin-like Growth Factor-I
\$10,000 (Investigator)
- 1995 – 1996 Allegheny-Singer Research Institute
Healing of the Achilles Tendon in the Rat: Augmentation by IGF-I
\$9,737 (Investigator)
- 1996 – 1997 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
Correlating Fixator Supplied Wrist Distraction with Fracture Reduction in a Simulated Fracture
\$5,000 (Principal Investigator)
- 1996 – 1997 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
Functional Measurement of Thumb Motion in Patients after CMC Arthroplasty
\$5,000 (Investigator)
- 1996 – 1997 Albert B. Ferguson, Jr., M.D. Orthopaedic Research Foundation
Efficacy of Insulin-Like Growth Factor in Promoting the Healing of Osteochondral Fractures
\$5,000 (Investigator)
- 1998 – 1999 Cardiac Assist Technologies, Inc.
Mechanical and Intended Use Testing of the CAT Sternal Closure System
\$40,883 (Principal Investigator)
- 1999 – 2001 **National Institutes of Health/NIAMS R55 AR044523 (James A. Shannon Director's Award)**
Accelerating Recovery from Soft Tissue Injury Using IGF-I
\$100,000 (Investigator)

- 1999 – 2000 Empi, Inc.
Evaluation of the Empi Shoulder Capsular Stretching Brace for Adhesive Capsulitis: A Pilot Study
\$11,680 (Principal Investigator)
- 1999 Arthritis Foundation, Minnesota Chapter
Mechanically Favorable Adaptive Bone Remodeling in a Subset of Rotator Cuff Arthropathy Patients
\$6,480 (Investigator)
- 2001 – 2002 National Football League Charities
MR Staging of Healing to Enable Accelerated Rehabilitation Following IGF-I Boosted Rotator Cuff Repair
\$154,800 (Investigator)
- 2002 – 2004 Arthritis Foundation
Mechanical Determinants of Post-Traumatic Arthritis in Tibial Pilon Fractures
\$270,000 (Investigator)
- 2002 – 2007 **National Institutes of Health/NIAMS P50 AR048939**
Pathogenesis—Prevention of Post-Traumatic OA
Project 1: Mechanical Determinants of Post-Traumatic OA
\$795,301 Subproject Total Costs (Investigator)
- 2002 – 2007 **National Institutes of Health/NIAMS P50 AR048939**
Pathogenesis—Prevention of Post-Traumatic OA
Biomechanics Core
\$1,261,464 Subproject Total Costs (Investigator)
- 2003 – 2008 **National Institutes of Health/NICHHD K01 HD042491**
Biomechanically Based Shoulder Rehabilitation Strategies
\$513,647 (Consultant)
- 2004 – 2006 AO Research Fund, Switzerland
Development of Fracture Energy for Objective Scoring of Injury Severity in Highly Comminuted Fractures
\$76,500 (Principal Investigator)
- 2005 – 2006 Orthopaedic Trauma Association
Objective Assessment of Injury Severity in Complex Intra-Articular Fractures
\$25,000 (Principal Investigator).
- 2006– 2008 Arthrosurface, Inc.
The Effects of Osteochondral Defects and Focal Resurfacing on Joint Contact Mechanics
\$60,738 (Principal Investigator)
- 2007 – 2009 World Arthrosis Organization
Quantifying Intra-articular Fracture Severity as a Risk Factor for Post-traumatic Osteoarthritis
\$50,000 (Investigator)
- 2007 – 2008 University of Iowa Office of the Vice President for Research Biological Sciences Funding Program
Articular Contact—Identifying Patients At Risk for Painful Knee Osteoarthritis
\$30,000 (Investigator)
- 2007 – 2009 The University of Iowa Roy J. and Lucille A. Carver College of Medicine Roy J. Carver Charitable Trust
Medical Research Initiative Grants – 3D Virtual Orthopaedic Reconstruction of Comminuted Fractures
\$20,000 (Investigator)
- 2007 – 2012 **National Institutes of Health/NIAMS P50 AR055533**
CORT: New Approaches to Assess and Forestall Osteoarthritis in Injured Joints
Project 4: Quantifying Injury Severity to Assess the Risk for Post-Traumatic Osteoarthritis
\$961,429 Subproject Total Costs (Co-Principal Investigator, Project 4)
- 2008 – 2009 Orthopaedic Trauma Association
Objective Assessment of Fracture-Associated Soft Tissue Injury Using CT-Based Texture Analysis
\$25,000 (Principal Investigator)
- 2008 – 2011 **National Institutes of Health/NIAMS-NIBIB R21 AR054015**
Quantifying Fracture Severity Using a 3-D Puzzle Solving Approach
\$359,273 Project Total Costs (Principal Investigator)

- 2009 – 2011 **National Institutes of Health/NIAMS 5 P50 AR055533** (Pilot & Feasibility project)
Expediting Patient-Specific Assessment of Chronic Contact Stress Exposure
\$141,450 Project Total Costs (Principal Investigator)
- 2009 – 2011 **National Institutes of Health/NIAMS 5 P50 AR055533** (Pilot & Feasibility project)
Shape-Machined Structural Fillers for Juxta-articular Segmental Bone Defects
\$149,678 Project Total Costs (Investigator)
- 2009 – 2012 **National Institutes of Health/NIAMS RC1 AR058403**
Biomarkers of the Risk for Post-Traumatic Osteoarthritis
\$366,686 Project Total Costs (Investigator)
- 2010 The Iowa Centers for Enterprise – Grow Iowa Values Fund Seed Grant
Establishing the potential clinical value of FxRedux for surgical reconstruction planning.
\$36,064 Project Total Costs (Principal Investigator)
- 2010 – 2012 OMeGA Medical Grants Association – Residency/Core Competency Innovation Grant
Physical Simulation for Articular Fracture Reduction Skills Acquisition and Assessment
\$36,000 (Investigator)
- 2011 The Iowa Centers for Enterprise – Grow Iowa Values Fund Seed Grant
Expanding the clinical value of FxRedux: Partnering with ISU for rapid manufacturing of bone defect filling implants.
\$98,000 Project Total Costs (Principal Investigator)
- 2011 – 2012 Orthopaedic Trauma Association: Resident Research Grant
Articular fracture reduction training for orthopaedic residents through pre-operative planning & simulation
\$10,000 (Investigator)
- 2012 The Iowa Centers for Enterprise – Grow Iowa Values Fund Seed Grant
Developing the FxRedux Articular Fracture Reduction Planning Service Model.
\$30,298 Project Total Costs (Principal Investigator)
- 2012 – 2013 University of Iowa Office of the VP for Research: Biological Sciences Funding Program
Prototyping an Electro-Mechanical Alternative to Purely Virtual Orthopedic Surgical Simulation
\$25,000 Project Total Costs (Investigator)
- 2012 – 2013 Orthopaedic Research and Education Foundation: Resident Research Project Grant
Wire navigation-based surgical skills simulation - a pilot study
\$5,000 (Investigator)
- 2012 – 2014 Iowa Centers for Enterprise Commercialization GAP Fund
Operationalizing the FxRedux Articular Fracture Reduction Planning Service
\$75,000 Total Costs (Principal Investigator)
- 2012 – 2015 Arthritis Foundation – Innovative Research Grant
Early Targeting of Knee Osteoarthritis: Predictive Value of Contact Stress
\$199,350 Project Total Costs (Investigator)
- 2012 – 2014 National Board of Medical Examiners – The Edward J. Stemmler, MD Medical Education Research Fund
1112-001: Simulation Approaches for Training in Fluoroscopically Guided Orthopaedic Trauma Surgery
\$150,000 Project Total Costs (Principal Investigator)
- 2013 – 2014 Foundation for Physical Medicine and Rehabilitation – Össur Prosthetic/Orthotic Research Grant
Discovering the Effect of a Realigning Brace on Tibiofemoral Contact Stress
\$6,507 Total Costs (Investigator)
- 2013 – 2014 Orthopaedic Trauma Association
Simulation Approaches for Training in Fluoroscopically Guided Articular Fracture Surgery
\$50,000 Total Costs (Co-Principal Investigator)
- 2014 – 2015 Foundation for Physical Medicine and Rehabilitation – Össur Prosthetic/Orthotic Research Grant
The Effect of Arch Orthoses on Tibial Rotation and Tibiofemoral Contact Stress
\$10,000 Total Costs (Investigator)

- 2012 – 2015 Musculoskeletal Transplant Foundation (received J.R. Neff Award as best proposal of 2011)
Automated Shape-Machining of Custom Bone Allograft Implants
\$290,455 Project Total Costs (Principal Investigator)
- 2014 – 2015 Orthopaedic Research and Education Foundation New Investigator Grant
Scapular Notching in Reverse Shoulder Arthroplasty with Medialized versus Lateralized Implants: A
Clinical and Finite Element Study
\$50,000 Total Costs (Investigator)
- 2013 – 2016 **National Institutes of Health/NIAMS R21 AR061808**
Multicenter Investigation of Mechanical Determinants of Post-Traumatic OA
\$385,751 Total Costs (Principal Investigator)
- 2014 – 2016 The American Board of Orthopaedic Surgery – Innovations in Resident Surgical Education
Transferability of Wire Navigation Skills Gained Using a Radiation-Free Simulator
\$25,000 Total Costs (Co-Principal Investigator)
- 2017 The Royal Society: International Exchange Award
Predicting Osteoarthritis Following Chronic Ankle Instability
£2777 Total Costs (Co-Principal Investigator)
- 2014 – 2017 **Agency for Healthcare Research and Quality R18 HS022077**
Improving Patient Safety in Orthopaedic Trauma Surgical Training
\$739,898 Total Costs (Principal Investigator)
- 2015 – 2018 Tornier, Inc.
Modeling Flex RSA Study
\$58,478 Total Costs (Co-Principal Investigator)
- 2015 – 2018 Tornier, Inc.
Scapular Notching Clinical Study
\$14,780 Total Costs (Co-Principal Investigator)
- 2017 – 2018 Orthopaedic Trauma Association
Does Contact Stress Better Predict PTOA and Patient Outcomes in Patients with Displaced Acetabular
Fractures Following ORIF?
\$20,000 Total Costs (Co-Principal Investigator)
- 2012 – 2018 **National Institutes of Health/NIAMS P50 AR055533**
UI CORT: Innovations to Assess and Forestall Post-Traumatic Osteoarthritis
Project 3: Diagnosing and Preventing Elevated Contact Stress to Avert Post-Traumatic OA
\$1,198,232 Subproject Total Costs (Principal Investigator, Project 3)
\$7,038,002 Overall Project Total Costs (Associate Director)
- 2015 – 2019 **US Department of Defense, CDMRP Peer Reviewed Medical Research Program Investigator-
Initiated Research Award (W81XWH-15-2-0087)**
Pathomechanics of Post-Traumatic OA Development in the Military Following Articular Fracture
\$755,257 Total Costs (Principal Investigator)
- 2017 – 2020 Orthopaedic Research & Education Foundation
Joint Contact Stress as a Tool for Clinical Decision Making in Periacetabular Osteotomy
\$209,804 Total Costs (Investigator)
- 2017 – 2020 Orthopaedic Trauma Association
An Imaging Framework for Clinically Testing New Treatments to Prevent Post-Traumatic OA
\$79,982 Total Costs (Co-Principal Investigator)
- 2018 – 2021 Pediatric Orthopaedic Society of North America
The Design and Validation of a Wire Navigation Simulator for Pediatric Supracondylar Humerus Fractures
\$49,701 Total Costs (Co-Investigator)
- 2018 – 2021 **National Institutes of Health R01 AR071648 / University of Kansas Medical Center Research
Institute, Inc.**
Accelerating Osteoarthritis Clinical Trials Through Low-Dose Standing CT Imaging
\$687,767 Total Costs (Site Principal Investigator - \$192,458 subaward)

- 2020 – 2021 UI Carver College of Medicine Clinical and Educational Small Grant Program
Examining Skill Transfer from Simulation to the Operating Room for the Treatment of Pediatric
Supracondylar Humerus Fractures
\$15,376 Total Costs (Co-Investigator)
- 2020 UI Carver College of Medicine / Iowa Initiative for Artificial Intelligence
Utilizing AI/ML Approaches to Assess Surgical Performance and Provide Virtual Coaching
\$15,000 Equivalent (Co-Investigator)
- 2017 – 2022 **Agency for Healthcare Research and Quality R18 HS025353**
Simulation to Support Competency-Based Training in Orthopedic Trauma
\$1,876,254 Total Costs (Co-Principal Investigator)
- 2018 – 2022 Orthopaedic Research and Education Foundation & American Board of Orthopaedic Surgery
Benchmarking Expert Performance to Establish Competency in Wire Navigation
\$300,000 Total Costs (Co-Investigator)
- 2019 – 2022 Orthopaedic Trauma Association
Introducing Wire Navigation Simulation to the OTA Resident Fracture Courses
\$79,286 Total Costs (Co-Principal Investigator)
- 2019 – 2022 American Association of Orthodontists Foundation –Orthodontic Faculty Development Fellowship Award
Fracture Energy Assessment Using CBCT: A Pilot Study for Predicting Risk of Post-Traumatic
Craniofacial Deformities
\$20,000 Total Costs (Research Mentor)
- 2021 – 2022 University of Calgary
Killam Visiting Scholar Award
\$50,000 CAD
- 2021 – 2022 Sigrid Jusélius Foundation
Visiting Professor Grant – University of Eastern Finland
€43,000
- 2021 – 2023 Orthopaedic Trauma Association/University of Utah
Correlating PROMIS-29 with Weight-Bearing CT Following Tibial Plafond Fracture
\$100,000 Total Costs (Co-Principal Investigator - \$23,973 subaward)
- 2018 – 2023 **US Department of Defense, CDMRP Peer Reviewed Medical Research Program, Focused Program
Award W81XWH-18-1-0658**
Translating Metabolic Responses to Mechanical Insult into Early Interventions to Prevent PTOA
Project 1: Small-scale Early Phase Clinical Trial of Amobarbital to Reduce PTOA Risk in Tibial Pilon
Fractures
\$2,320,698 Subproject Total Costs (Co-Investigator, Project 1)
Project 2: Integrating Pathomechanical PTOA Risk into Clinical Decision-making Following IAF
\$2,420,192 Subproject Total Costs (Project Lead, Project 2)
\$9,999,762 Total Costs

SERVICE

Departmental/Institutional

- 2011 – 2017 Residency Research Committee, Department of Orthopaedics & Rehabilitation, The University of Iowa
- 2012 – Surgical Skills Training Curriculum Development, Department of Orthopaedics & Rehabilitation, The
University of Iowa
- 2012 – Surgical Skills Training through Simulation – Lead a team of engineers and orthopaedic surgeons
developing an education and research program to better and more safely train orthopaedic residents in
their surgical skills.
- 2013, 2014 NSF CAREER Session for early career faculty (past reviewers panel) – Office of the VP for Research
and Economic Development, The University of Iowa
- 2015 Participant, 5-year review of the University of Iowa Department of Ophthalmology

- 2019 – Conflict of Interest in Research Committee – Office of the Vice President for Research, The University of Iowa
- 2018, 2019 Developed and Chaired Internal Seed Grant program, Department of Orthopedics and Rehabilitation
- 2019 DoD Overview & PI Experiences (panel member) – Office of the VP for Research and Economic Development, The University of Iowa
- 2022 College of Engineering Review Committee – on behalf of the Office of the Executive Vice President and Provost, The University of Iowa
- 2023 College of Engineering Dean Search Committee – on behalf of the Office of the Executive Vice President and Provost, The University of Iowa

Professional Organizations

American Academy of Orthopaedic Surgeons
2003 Capitol Hill Research Advocacy Visits March 12-13 in Washington, DC.

American Society of Biomechanics, Member 1988–present
2000 – 2003 Newsletter Editor
2003 – 2007 Secretary/Treasurer
2004 – Graduate Student Mentor, Annual Meeting
2005 – 2013 Abstract Review and Session Moderator
2010 – 2013 President (three-year post progressing from President-elect to President to Past-President)
2013 – 2014 Symposium Organizer Annual Meeting
2017 Program Committee
2019 Invited Symposium Organizer, Annual Meeting
2020 Judge, Three Minute Thesis (3MT) Competition, M.S. Level
2020 Mentor, Early Career Faculty Workshop, Annual Meeting
2020 – 2022 Secretary, ASB Council of Fellows

American Society of Mechanical Engineers, Member 1989–present
1997 Session Moderator and Poster Judge, Summer Bioengineering Conference
2011 – 2012 Student Paper Competition Judge, Summer Bioengineering Conference

European Society of Biomechanics
2015 Scientific Committee, 25th Congress of ESB, Prague, Czech Republic

International Society of Biomechanics, Member 2005–present
2019 Invited Symposium Organizer, Annual Meeting

Orthopaedic Research Society, Member 1990–present
2006 – Abstract Review and Session Moderator for Annual Meeting
2010 Workshop Organizer, 56th Annual Meeting
2012 – 2013 Program Committee, Annual Meeting
2016 – 2019 Awards and Recognition Committee (Chair, 2017)
2017 Spotlight Session Moderator for Annual Meeting
2022 Elected as ORS Fellow

Orthopaedic Trauma Association, Research Member 2006–present
2013 – 2019 Research Committee
2016 Organizer, Grant Writing Workshop at Annual Meeting
2017 – Faculty, Residents Comprehensive Fracture Course
2021 – Public Relations Committee

Osteoarthritis Research Society International, Member 2005–present
2016 – 2018 Publications Committee
2017 – Meet the Professor Mentorship Session, World Congress on Osteoarthritis
2020 – 2023 Research and Training Committee
2024 – 2028 Board of Directors

Society for Simulation in Healthcare, Member 2015

Weight-Bearing CT International Study Group, Member 2018–present

American Institute of Medical and Biological Engineering, Fellow 2022–present

American Orthopaedic Foot and Ankle Society, Member 2022–present

Review of Grant Proposals

2001 – 2006	NSF CAREER/Biomedical Engineering Grant Award review
2008	CDC National Center for Injury Prevention and Control grant review NSF Research to Aid Persons with Disabilities Panel
2010 – 2013	Arthritis Foundation Research Grant review
2011	University of Iowa OVPR Biological Sciences Funding Program (BSFP)
2011 –	DoD/CDMRP Review Panels
2011 –	Arthritis Research UK Grant review Orthopaedic Research and Education Foundation Research Grants
2012	North Carolina Biotechnology Center Multidisciplinary Research Grants AO Foundation, Switzerland Kentucky Science and Engineering Foundation R&D Excellence awards Canadian Institutes of Health Research, Collaborative Health Research
2013 – 2020	Orthopaedic Trauma Association
2014 – 2015	NBME Stemmler Fund
2016	The Wellcome Trust AO Foundation, Switzerland
2017	NSF SBIR Biomedical/eHealth Phase I Panel
2018	UK Medical Research Council
2018 –	Chair, DoD/CDMRP Review Panels
2019	AO Foundation, Switzerland
2019 – 2020	ad hoc, NIH Special Emphasis Panel (SEP) ZRG1 MOSS D10
2021 – 2025	core member, NIH Special Emphasis Panel (SEP) ZRG1 MOSS D10
2022, 2023	Canada Research Chairs Program
2023	Swiss National Science Foundation

Review of Manuscripts/Book Chapters

AAOS Orthopaedic Knowledge Update 10: Musculoskeletal Biomechanics chapter

Journal of Bone and Joint Surgery (Elite Reviewer), Journal of Orthopaedic Research (Editorial Review Board 2017–present), Journal of Applied Biomechanics (Editorial Board 2000–2011; Associate Editor 2009–2011), BMC Mechanical Engineering (Editorial Board 2018–2019)

American Journal of Sports Medicine, ASME Journal of Biomechanical Engineering, Annals of Biomedical Engineering, Biomechanics and Modeling in Mechanobiology, Bone, Clinical Orthopaedics and Related Research, Clinical Biomechanics, Clinical and Translational Science, Computational and Mathematical Methods in Medicine, Computer Methods in Biomechanics and Biomedical Engineering, International Journal of Computer Assisted Radiology and Surgery, Journal of Biomechanics, Journal of Bone and Joint Surgery [American], Journal of Orthopaedic & Sports Physical Therapy, Journal of Orthopaedic Research, Journal of Orthopaedic Trauma, Medical Engineering & Physics, Osteoarthritis and Cartilage, Proceedings IMechE Part H: Journal of Engineering in Medicine, Rapid Prototyping Journal, Skeletal Radiology

Invited Workshops/Symposia/Lectures

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| 2001 | 6 th Annual Congress of the European College of Sport Science
<i>Kinetic analyses of ligamentous function in the human knee: Techniques and research findings</i>
Cologne, Germany. July 24–28, 2001. |
| 2003 | ASME Nano/Bio: Engineering Trends & Applications Conference
<i>Mechanical properties of biological materials</i>
Portland, Oregon. April 3, 2003. |
| 2008 | Symposium – The Nuts and Bolts of Biomechanical Testing.
<i>Computational stress analysis in orthopaedic trauma research</i>
Basic Science Focus Forum, 24th Annual Meeting of the Orthopaedic Trauma Association.
Denver, Colorado. October 15–16, 2008. |
| 2008 | Post-Joint Injury Osteoarthritis Conference
NIH/American Orthopaedic Society for Sports Medicine
New Orleans, Louisiana. December 11–14, 2008. |

- 2009 Numerical Modelling and Trauma Care
Quantifying Severity of Comminuted Intra-articular Fractures
Osteosynthesis & Trauma Care Foundation “Hot Topic” Workshop
Cambridge, Massachusetts. June 14–16, 2009.
- 2011 Symposium – Biomechanics: Choosing the right model.
Critical Variables (stiffness, strain, etc.) – What is Best?
Basic Science Focus Forum, 27th Annual Meeting of the Orthopaedic Trauma Association.
San Antonio, Texas. October 12–15, 2011.
- 2011 Functional Assessment of Fracture Healing
CT-Based Assessment of Fracture Severity and Fracture-Associated Soft Tissue Injury
Osteosynthesis & Trauma Care Foundation “Hot Topic” Workshop
Barcelona, Spain. October 21–22, 2011.
- 2012 Proximal Humerus Fracture Workshop – Identifying Issues and Finding Solutions
Assessing fracture severity: Current limitations and future possibilities
International Society for Fracture Repair
Edinburgh, Scotland. September 13–14, 2012.
- 2013 Extremity War Injuries VIII: Sequelae of Combat Injuries (invited participant)
American Academy of Orthopaedic Surgeons / Orthopaedic Trauma Association / Society of Military
Orthopaedic Surgeons / Orthopaedic Research Society
Washington, DC. February 11–13, 2013.
- 2013 11th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering
*Considerations in subject-specific articular joint modeling related to implementation in larger
population-based studies* in Special Session 11: Subject- and Patient-Specific Articular Joint Modeling
Salt Lake City, Utah. April 3–7, 2013.
- 2014 Extremity War Injuries IX: Reducing Disability within the Military (invited participant)
American Academy of Orthopaedic Surgeons / Orthopaedic Trauma Association / Society of Military
Orthopaedic Surgeons / Orthopaedic Research Society
Washington, DC. February 10–12, 2014.
- 2014 7th World Congress of Biomechanics
Person-specific modeling for prediction of future knee health in population-representative cohorts in
session Nouveau Biomechanics: Big Data, Community Involvement, Open Science
Boston, Massachusetts. July 7–11, 2014.
- 2015 Orthopaedic Research Society 2015 Annual Meeting (Spotlight Talk)
Progress toward better understanding, predicting, and preventing post-traumatic OA
Las Vegas, Nevada. March 28–31, 2015.
- 2015 Design of Medical Devices Conference
Improving Patient Safety in Orthopaedic Trauma Surgical Training
Minneapolis, Minnesota. April 13–16, 2015.
- 2016 40th Annual Meeting, American Society of Biomechanics
Founders and Fellows Forum panelist
Raleigh, North Carolina. August 3–6, 2016.
- 2017 Webinar, Biomedical Engineering Society
A Role for Computational Modeling in Medical Practice
April 18, 2017.
- 2017 University of Iowa Mini Medical School: The Science of Sports
Using Biomechanical Knowledge and Computational Modeling to Improve Surgical Outcomes
Iowa City, Iowa. May 3, 2017.
- 2017 13th Annual Northwest Biomechanics Symposium
Keynote Address: *Enabling Post-traumatic OA Risk Prediction from Pathomechanics in Clinical Practice*
Eugene, Oregon. May 19, 2017.

- 2018 2018 International Foot and Ankle Biomechanics (i-FAB) Meeting
Alex Stacoff Lecture: *Enabling Post-Traumatic OA Risk Prediction from Pathomechanics*
New York City, New York. April 10, 2018.
- 2018 Engineering Solutions for Health: Biomedical Engineering Research Strategy, University of Calgary
Enabling Post-Traumatic Osteoarthritis Risk Prediction from Pathomechanics
Calgary, AB Canada. June 6, 2018.
- 2019 Biophysics of Bone and Cartilage Research Group Seminar, University of Eastern Finland
Enabling Post-Traumatic Osteoarthritis Risk Prediction from Pathomechanics
Kuopio, Finland. April 4, 2019.
- 2019 Center for Applied Biomechanics Seminar, University of Virginia
Enabling Post-Traumatic Osteoarthritis Risk Prediction from Pathomechanics
Charlottesville, VA. October 23, 2019
- 2020 CurveBeam Academy Virtual Conference
3D Joint Space Width from Weight Bearing CT Detects Progressive Narrowing After Tibial Pilon Fractures
April 22, 2020 (by Zoom)
- 2020 Program for Advanced Medical Imaging, Cleveland Clinic
WBCT-enabled Imaging Markers of Joint Health
September 24, 2020 (by Zoom)
- 2021 Virtual Open Board Meeting, Arthritis Foundation New York
Scientific Update: OA-Clinical Trial Network
February 18, 2021 (by Zoom)
- 2021 Symposium – Post-Traumatic OA: From Basic Science to Clinical Applications
Assessing Mechanical Variables that Impact PTOA Development and Outcome
Basic Science Focus Forum, 37th Annual Meeting of the Orthopaedic Trauma Association.
Fort Worth, Texas. October 20–23, 2021.
- 2022 Human Performance Laboratory Seminar, University of Calgary
A Computational Modeling Framework to Assess the Effects of Carbon Fiber Bracing on Ankle Joint Function and Contact Mechanics
Calgary, Alberta, Canada. February 17, 2022.
- 2022 Musculoskeletal Diseases Seminar, University of Eastern Finland
Engineering in Orthopaedics: A Stranger in a Strange Land
Kuopio, Finland. April 13, 2022.
- 2022 Invited Research Speaker, American Orthopaedic Foot and Ankle Society 2022 Annual Meeting
Upping our Game in Foot and Ankle Research
Quebec City, Quebec, Canada. September 16, 2022.
- 2022 Musculoskeletal Diseases Seminar, University of Eastern Finland
An Intra-Operative Guidance System for Evaluating Joint Biomechanics to Aid in Achieving Evidence-Based Surgical Objectives that Reduce Osteoarthritis Risk
Kuopio, Finland. October 6, 2022.
- 2022 Symposium – Distal Femur Fractures: Basic Science and International Perspectives
Distal Femur Fixation: Biomechanical Considerations
Basic Science Focus Forum/International Trauma Care Forum, 38th Annual Meeting of the Orthopaedic Trauma Association. Tampa, Florida. October 12–15, 2022.
- 2023 Interdisciplinary Musculoskeletal Research Seminar, University of Minnesota
Post-Traumatic OA Risk from Pathomechanics: Supporting Studies and New Intervention Strategies
Minneapolis/St. Paul, Minnesota. September 13, 2023 (by Zoom).

2023 Joint Biomedical Engineering Graduate Seminar, Marquette University/Medical College of Wisconsin
Post-Traumatic OA Risk from Pathomechanics: Supporting Studies and New Intervention Strategies
Milwaukee, Wisconsin. September 15, 2023.