

CURRICULUM VITAE – 2/17/23

Jeffrey A. Weiss, Ph.D.

Department of Biomedical Engineering, University of Utah
 36 S. Wasatch Drive, Rm. 3100
 Salt Lake City, Utah 84112
 (801) 634-5442
 jeff.weiss@utah.edu
 Lab Website: mrl.sci.utah.edu
 Twitter: @JeffWeissUT

EDUCATION

- 1994 – 1996 Postdoctoral Scientist, Applied Mechanics Group
 Lawrence Livermore National Laboratory
- 1994 Ph.D. in Bioengineering, University of Utah
- 1990 M.S., Bioengineering, University of California, San Diego
- 1989 B.S., Bioengineering, University of California, San Diego

PROFESSIONAL AND ACADEMIC APPOINTMENTS

- 7/2010 – present Professor, Department of Biomedical Engineering
 University of Utah, Salt Lake City, Utah
- 7/2010 – present Adjunct Professor, Department of Orthopedics
 University of Utah, Salt Lake City, Utah
- 5/2013 – present Adjunct Professor, School of Computing
 University of Utah, Salt Lake City, Utah
- 1/2003 – present Faculty Member, Scientific Computing and Imaging Institute
 University of Utah, Salt Lake City, Utah
- 6/2006 – 6/2009 Associate Chair and Director of Graduate Studies
 Department of Biomedical Engineering
 University of Utah, Salt Lake City, Utah
- 6/2003 – 6/2010 Associate Professor, Department of Biomedical Engineering
 University of Utah, Salt Lake City, Utah
- 6/2003 – 6/2010 Adjunct Associate Professor, Department of Orthopaedics
 University of Utah, Salt Lake City, Utah
- 8/2000 – 6/2003 Assistant Professor, Department of Bioengineering
 University of Utah, Salt Lake City, Utah

1/2001 – 6/2003	Adjunct Assistant Professor, Department of Orthopaedics University of Utah, Salt Lake City, Utah
10/1998 - 9/2000	Assistant Professor, Biomedical Engineering Program University of Arizona, Tucson, Arizona
12/1998 - 9/2000	Assistant Professor, Aerospace and Mechanical Engineering University of Arizona, Tucson, Arizona
10/1997 - 10/1998	Institute Director, Orthopedic Biomechanics Institute Salt lake City, Utah
12/1994 – 8/2000	Research Assistant Professor, Department of Biomedical Engineering University of Utah, Salt Lake City, Utah
8/1994 - 10/1997	Director of Basic Research, Orthopedic Biomechanics Institute Salt Lake City, Utah
10/1994 - 11/1996	Postdoctoral Scientist, Applied Mechanics Group Lawrence Livermore National Laboratory, Livermore, California
12/1991 - 8/1994	Scientific Computing Consultant, Utah Supercomputing Institute University of Utah, Salt Lake City, Utah

HONORS AND AWARDS

- 2022 Honored for being a Top 15% Graduate Level Instructor in the College of Engineering, University of Utah based on student evaluations (BME 5250/6250, Biomechanics II).
- 2022 Elected as Fellow of the Orthopaedic Research Society
- 2021 University of Utah Distinguished Scholarly and Creative Research Award, “in recognition of his important contributions to research and scholarship in his field and contributing to the academic excellence of the University of Utah”.
- 2018 Elected as Fellow of the American Society of Mechanical Engineers
- 2015 Ranked as one of the Top Instructors in the College of Engineering, University of Utah based on student evaluations.
- 2013 ASME Van C. Mow Medal, “for seminal contributions to research in biomechanics related to fundamental structure-function relationships in musculoskeletal soft tissues, subject-specific modeling of joint mechanics, image-based biomechanics, the mechanics of angiogenesis, and the development and distribution of the FEBio software suite.”
- 2013 Ranked as one of the Top Instructors in the College of Engineering based on student evaluations.
- 2010 ASME Richard Skalak Award for Best Paper Published in the Journal of Biomechanical Engineering, Drury NJ, Ellis BJ, Weiss JA, McMahon PJ, Debski RE: The impact of glenoid labrum thickness and modulus on labrum and glenohumeral capsule function. Journal of Biomechanical Engineering, 132(12), 2010.
- 2011 William H Harris Award from the Orthopaedic Research Society, "in recognition of the outstanding quality and scientific achievement of the paper": Elkins JM, Stroud NJ, Rudert MJ, Tochigi Y, Pederson DR, Ellis BJ, Callaghan JJ, Weiss JA, Brown TD: The capsule's

contribution to total hip construct stability – A finite element analysis. *Journal of Orthopaedic Research*, October 2010.

Elected as Fellow, American Institute for Medical and Biological Engineering, December 2006.

Honored by Mentor Recognition Program at U.C. San Diego for outstanding training of BME Undergraduates, November 2005.

Winner of the Taylor & Francis prize for “outstanding innovation in computer methods in biomechanics & biomedical engineering”, 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Madrid, Spain, March 2004

ASME YC Fung Young Investigator Award Recipient, May 2002

NSF CAREER Award Recipient, February 2002

Supervisor, senior team winning Lockheed Martin Ingenuity Design Award, Fall 1999

Whitaker Foundation Research Grant Recipient, 3/1995

NIH/NIAMS National Research Service Award (F32), 12/1994

Clyde Christensen Scholarship - 1991/92 Academic Year, U. of Utah

Provost's Honor List at University of Utah - Fall 1990 to Summer 1994

Provost's Honor List at UCSD - Spring 1987 to Spring 1990

PUBLICATIONS

h-index (Google Scholar):	64
i10-index (Google Scholar):	148
Citations:	14,862

Thesis/Dissertation

Weiss JA: Evaluation of a new injury model to study medial collateral ligament healing. Masters Thesis, University of California, San Diego, 1990.

Weiss JA: A constitutive model and finite element representation for transversely isotropic soft tissues. PhD Dissertation, University of Utah, August, 1994.

Refereed Journal Articles (* = corresponding author)

1. *Woo SL-Y, Weiss JA, Gomez MA, Hawkins DA: Measurement of changes in ligament tension with knee motion and skeletal maturation. *Journal of Biomechanical Engineering*, 112:46-51, 1990.
2. *Woo SL-Y, Ohland KJ, Weiss JA.: The effects of aging and sex on the biomechanical properties of the medial collateral ligament. *Mechanisms of Ageing and Development*, 56:129-142, 1990.
3. Weiss JA, *Woo SL-Y, Ohland KJ, Horibe S, Newton PO: Evaluation of a new injury model to study medial collateral ligament healing: Primary repair vs nonoperative treatment. *Journal of Orthopaedic Research*, 9:516-528, 1991.
4. Anderson DR, Weiss JA, Takai S, Ohland KJ, *Woo SL-Y: Healing of the medial collateral ligament following a triad injury: A biomechanical and histological study of the knee in rabbits. *Journal of Orthopaedic Research*, 10:485-495, 1992.
5. *France EP, Weiss JA, Paulos LE: Allograft ligament reconstruction: Biomechanical issues and testing. *Sports Medicine and Arthroscopy Review*, 1:47-60, 1993.
6. Bagi CM, Mecham M, Weiss JA, *Miller SC: Comparative morphometric changes in rat cortical bone following ovariectomy and/or immobilization. *Bone*, 14:877-883, 1993.

7. Straight CB, France EP, Rosenberg TD, Paulos LE, *Weiss JA: Soft tissue fixation to bone: A biomechanical analysis of spiked soft tissue washers. *American Journal of Sports Medicine*, 22:339-343, 1994.
8. *Rabbitt RD, Weiss JA, Christensen GE, Miller MI: Mapping of hyperelastic deformable templates using the finite element method. In *Vision Geometry IV*, Melter RA, Wu AY and Bookstein FL Editors, *Proc SPIE 2573:252-265*, 1995.
9. *Weiss JA, Maker BN, Govindjee, S: Finite element implementation of incompressible, transversely isotropic hyperelasticity. *Computer Methods in Applied Mechanics and Engineering*, 135:107-128, 1996.
10. Puso MA and *Weiss JA: Finite element implementation of anisotropic quasilinear viscoelasticity using a discrete spectrum approximation. *Journal of Biomechanical Engineering*, 120:62-70, 1998.
11. Quapp KM and *Weiss JA: Material characterization of human medial collateral ligament. *Journal of Biomechanical Engineering*, 120:757-763, 1998.
12. Richards M, Goulet JA, Weiss JA, Waanders NA, Schaffler MB, *Goldstein SA: Bone regeneration and fracture healing: Experience with distraction osteogenesis model. *Clinical Orthopaedics and Related Research*, 355S:191-204, 1998.
13. *Weiss JA, Rabbitt RD, Bowden AE: Incorporation of medical image data in finite element models to track strain in soft tissues. In *Laser-Tissue Interaction IX*, Steven L. Jacques, Editor, *Proc SPIE 3254:477-484*, 1998.
14. Bowden AE, Rabbitt RD, *Weiss JA: Anatomical registration and segmentation by warping template finite element models. In *Laser-Tissue Interaction IX*, Steven L. Jacques, Editor, *Proc SPIE 3254:469-476*, 1998.
15. Richards M, Waanders NA, Weiss JA, Bhatia V, Senunas LE, Schaffler MB, Goldstein SA, *Goulet JA: Reduced gap strains induce changes in bone regeneration during distraction. *Journal of Biomechanical Engineering*, 121:348-355, 1999.
16. *Weiss JA and Paulos LE: Mechanical testing of ligament fixation devices. *Techniques in Orthopedics*, 14(1):14-21, 1999.
17. Cordaro NM, *Weiss JA, Szivek JA: Strain transfer between a CPC coated strain gauge and cortical bone during bending. *Journal of Biomedical Materials Research - Applied Biomaterials*, 58(2):147-155, 2001.
18. Gardiner JC, and *Weiss JA: Simple shear testing of parallel-fibered planar soft tissues. *Journal of Biomechanical Engineering*, 123:1-5, 2001.
19. *Weiss JA and Gardiner JC: Computational modeling of ligament mechanics. *Critical Reviews in Biomedical Engineering*, 29(3):1-70, 2001.
20. Gardiner JC, *Weiss JA, Rosenberg TD: Strain in the human medial collateral ligament during valgus loading. *Clinical Orthopaedics and Related Research*, 2001(391):266-274, 2001.
21. Hansen KA, Weiss JA, *Barton JK: Recruitment of tendon crimp with applied tensile strain. *Journal of Biomechanical Engineering*, 124:72-77, 2002.
22. *Weiss JA, Gardiner JC, Bonifasi-Lista C: Ligament material behavior is nonlinear, viscoelastic and rate-independent under shear loading. *Journal of Biomechanics*, 35:943-950, 2002.
23. Veress AI, *Weiss JA, Gullberg GT, Vince DG, Rabbitt RD: Strain measurement in coronary arteries using intravascular ultrasound and deformable images. *Journal of Biomechanical Engineering*, 124(6):734-741, 2002.
24. Gardiner JC and *Weiss JA: Subject-specific finite element models can predict strain in the human medial collateral ligament during valgus knee loading. *Journal of Orthopaedic Research*, 21:1098-1106, 2003.

25. *Guilkey JE and Weiss JA: Implicit time integration with the Material Point Method. *International Journal for Numerical Methods in Engineering*, 57:1323-1338, 2003.
26. Krishnan L, *Weiss JA, Wessmann MD, Hoying JB: Design and application of a test system for viscoelastic characterization of collagen gels. *Tissue Engineering*, 10(1-2):241-252, 2004.
27. Stabile KJ, Pfaeffle J, Weiss JA, Fischer K, *Tomaino MM: Bidirectional mechanical properties of the human forearm interosseous ligament. *Journal of Orthopaedic Research*, 22(3):607-612, 2004.
28. Bonifasi-Lista C, Lake SP, Small M, *Weiss JA: Viscoelastic properties of the human medial collateral ligament under longitudinal, transverse and shear loading. *Journal of Orthopaedic Research*, 23(1):67-76, 2005.
29. *Debski RE, Weiss JA, Newman WJ, Moore SM, McMahon PJ: Stress and strain in the anterior band of the inferior glenohumeral ligament during a simulated clinical examination. *Journal of Shoulder and Elbow Surgery*, 14:24S-31S, 2005.
30. Lujan TJ, Lake SP, Plaizier TA, Ellis BJ, *Weiss JA: Simultaneous measurement of three-dimensional joint kinematics and tissue strains with optical methods. *Journal of Biomechanical Engineering*, 127:193-197, 2005.
31. Anderson AE, Peters CL, Tuttle BD, *Weiss JA: A subject-specific finite element model of the pelvis: Development, validation and sensitivity studies. *Journal of Biomechanical Engineering*, 127(3):364-373, 2005.
32. *Weiss JA, Gardiner JC, Ellis BJ, Lujan TJ, Phatak NS: Three-dimensional finite element modeling of ligaments: Technical aspects. *Medical Engineering and Physics*, 27(10):845-61, 2005 (Invited paper for special issue: Advances in the finite element modeling of soft tissue deformation).
33. Veress AI, Gullberg GT, *Weiss JA: Measurement of strain in the left ventricle with cine-MRI and deformable image registration. *Journal of Biomechanical Engineering*, 127(7):1195-1207, 2005.
34. *Shiu Y-T, Weiss JA, Hoying JB, Iwamoto MN, Joung IS, Quam CT: The role of mechanical stresses in angiogenesis. *Critical Reviews in Biomedical Engineering*, 33(5):431-510, 2005.
35. *Weiss JA, Maakestad BJ: Permeability of human medial collateral ligament transverse to the collagen fiber direction. *Journal of Biomechanics* 39(2):276-283, 2006.
36. Guilkey JE, Hoying JB, *Weiss JA: Computational modeling of multicellular constructs with the Material Point Method. *Journal of Biomechanics*, 39(11):2074-2086, 2006.
37. Ellis BJ, Lujan TJ, Dalton MS, *Weiss JA: MCL insertion site and contact forces in the ACL-Deficient knee. *Journal of Orthopaedic Research*, 24(4):800-810, 2006.
38. Veress AI, Segars WP, Weiss JA, Tsui BMW, *Gullberg GT: Normal and pathological NCAT image and phantom data based on physiologically realistic left ventricle finite element models. *IEEE Transactions on Medical Imaging*, 25(12):1604-1616, 2006.
39. Ionescu I, Guilkey JE, Berzins M, Kirby RM, *Weiss JA: Simulation of soft tissue failure using the Material Point Method. *Journal of Biomechanical Engineering*, 128(6):917-924, 2006.
40. Kirkpatrick ND, Hoying JB, Bottling SK, Weiss JA, *Utzinger U: In vitro model for endogenous optical signatures of collagen. *Journal of Biomedical Optics*, 11(5):054021, 2006.
41. Ellis BJ, Debski RE, Moore SM, McMahon PJ, *Weiss JA: Methodology and sensitivity studies for finite element modeling of the inferior glenohumeral ligament complex. *Journal of Biomechanics*, 40(3):603-612, 2007.

42. Lujan TJ, Underwood CJ, Henninger HB, Thompson BM, *Weiss JA: Effect of dermatan sulfate glycosaminoglycans on the quasi-static material properties of the human medial collateral ligament. *Journal of Orthopaedic Research*, 25(7):894-903, 2007.
43. *Ateshian GA, Ellis BJ, Weiss JA: Equivalence between instantaneous biphasic and incompressible elastic material response. *Journal of Biomechanical Engineering*, 129(3):405-412, 2007.
44. Lujan TJ, Dalton MS, Thompson BM, Ellis BJ, *Weiss JA: Effect of ACL Deficiency on MCL strains and joint kinematics. *Journal of Biomechanical Engineering*, 129(3):386-392, 2007.
45. Henninger HB, Underwood CJ, Maas SA, Whitaker RT, *Weiss JA: Spatial distribution and orientation of dermatan sulfate in human medial collateral ligament. *Journal of Structural Biology*, 158:33-45, 2007.
46. Phatak N, Sun Q, Kim S-E, Parker DL, Sanderss RK, Veress AI, Ellis BJ, *Weiss JA: Noninvasive measurement of ligament strain with deformable image registration. *Annals of Biomedical Engineering*, 35(7):1175-1187, 2007.
47. Anderson AE, Ellis BJ, *Weiss JA: Verification, validation and sensitivity studies in computational biomechanics. *Computer Methods in Biomechanics and Biomedical Engineering*, 10(3):171-184, 2007.
48. Krishnan L, Hoying JB, Ngyuen H, Song H, *Weiss JA, Interaction of angiogenic microvessels with the extracellular matrix. *American Journal of Physiology: Heart and Circulation Physiology*, 293(6):H3650-H36588, 2007.
49. Anderson AE, Ellis BJ, Peters CL, *Weiss JA, Cartilage thickness: Factors influencing multidetector CT measurements in a phantom study. *Radiology*, 246(1):144-141, 2008.
50. Veress AI, Weiss JA, Huesman RH, Reutter BW, Taylor SE, Sitek A, Feng B, Yang Y, *Gullberg GT: Measuring regional changes in the diastolic deformation of the left ventricle of SHR rats using microPET technology and hyperelastic warping. *Annals of Biomedical Engineering*, 36(7):1104-17, 2008.
51. Krishnan L, Underwood CJ, Maas S, Ellis BJ, Kode TC, Hoying JB, *Weiss JA: Effect of mechanical boundary conditions on orientation of angiogenic microvessels. *Cardiovascular Research*, 78(2):324-32, 2008.
52. Anderson AE, Ellis BJ, Maas S, Peters CL, *Weiss JA: Validation of finite element predictions of cartilage contact pressure in the human hip joint. *Journal of Biomechanical Engineering*, 130(5), 2008.
53. Phatak NS, Maas SA, Veress AI, Pack NA, DiBella EV, *Weiss JA: Strain measurement in the left ventricle during systole with deformable image registration. *Medical Image Analysis*, 13(2):354-361, 2009.
54. Lujan TJ, Underwood CJ, Jacobs NT, *Weiss JA: Contribution of glycosaminoglycans to the viscoelastic tensile behavior of human ligament. *Journal of Applied Physiology*, 106(2):423-31, 2009.
55. Henninger HB, Maas SA, Shepherd J, Joshi S, *Weiss JA, Transversely isotropic distribution of sulfated glycosaminoglycans in human medial collateral ligament: A quantitative analysis. *Journal of Structural Biology*, 165:176-183, 2009.
56. Rainis EJ, Maas SA, Henninger HB, McMahon PJ, Weiss JA, *Debski RE: Material properties of the axillary pouch of the glenohumeral capsule: is isotropic material symmetry appropriate? *Journal of Biomechanical Engineering*, 131(3):031007, 2009.
57. *Peters CL, Erickson J, Anderson L, Anderson AE, Weiss JA: Hip joint surgery: understanding complex pathomorphology. *Journal of Bone and Joint Surgery American*, 91:42-58, 2009.
58. Ellis BJ, Drury NJ, Moore SM, McMahon PJ, Weiss JA, *Debski RE: Finite element modelling of the glenohumeral capsule can help assess the tested region during a clinical

- exam. *Computer Methods in Biomechanical and Biomedical Engineering*, 13(3):413-418, 2009.
59. Moore SM, Ellis BJ, Weiss JA, McMahon PJ, *Debski RE: The glenohumeral capsule should be evaluated as a sheet of fibrous tissue: A validated finite element model. *Annals of Biomedical Engineering*, 38(1):66-76, 2010.
 60. Voycheck CA, Rainis EJ, McMahon PJ, Weiss JA, *Debski RE: Effects of region and sex on the mechanical properties of the glenohumeral capsule during uniaxial extension. *Journal of Applied Physiology*, 108:1711-1718, 2010.
 61. Reese SP, Maas SA, *Weiss JA: Micromechanical models of helical superstructures in ligament and tendon fibers predict large poisson's ratios. *Journal of Biomechanics*, 43(7):1394-1400, 2010.
 62. Moore SM, Ellis BJ, Weiss JA, McMahon PJ, *Debski RE: The glenohumeral capsule should be evaluated as a sheet of fibrous tissue: A validated finite element model. *Annals of Biomedical Engineering*, 38(1):66-76, 2010.
 63. Henninger HB, Reese SP, Anderson AE, *Weiss JA: Validation of computational models in biomechanics. *Proc. IMechE, Part H: J. Engineering in Medicine*, 224(H7):801-812, 2010.
 64. Henninger HB, Underwood CJ, Ateshian GA, *Weiss JA: Effect of sulfated glycosaminoglycan digestion on the transverse permeability of medial collateral ligament. *Journal of Biomechanics*, 43:2567-2573, 2010.
 65. Drury NJ, Ellis BJ, Weiss JA, McMahon PJ, *Debski RE: The impact of glenoid labrum thickness and modulus on labrum and glenohumeral capsule function. *Journal of Biomechanical Engineering*, 132(12), 2010. Winner of the ASME Richard Skalak Award for Best Paper Published in the *Journal of Biomechanical Engineering*.
 66. Chang CC, Nunes SS, Sibole SC, Krishnan L, Williams SK, Weiss JA, *Hoying JB: Angiogenesis in a microvascular construct for transplantation depends on the method of chamber circulation. *Tissue Engineering Part A*, 16(3):795-805, 2010.
 67. *Ateshian GA, Maas S, Weiss JA: Finite element algorithm for frictionless contact of porous permeable media under finite deformation and sliding. *Journal of Biomechanical Engineering*, 132(6):1006-1019, 2010.
 68. *Ateshian GA, Weiss JA: Anisotropic hydraulic permeability under finite deformation. *Journal of Biomechanical Engineering*, 132(11):1004-1011, 2010.
 69. Anderson AE, Ellis BJ, Maas SA, *Weiss JA: Effects of idealized joint geometry on finite element predictions of cartilage contact stresses in the hip. *Journal of Biomechanics*, 43(7):1351-1357, 2010.
 70. Drury NJ, Ellis BJ, Weiss JA, McMahon PJ, *Debski RE: Finding consistent strain distributions in the glenohumeral capsule between two subjects: Implications for physical examinations. *Journal of Biomechanics*, 44(4):607-613, 2011.
 71. Henak CR, Ellis BJ, Harris MD, Anderson AE, Peters CL, *Weiss JA: Role of the acetabular labrum in load support across the hip joint. *Journal of Biomechanics*, 44(12):2201-2206, 2011.
 72. Elkins JM, Stroud JS, Rudert MJ, Tochigi Y, Pedersen DR, Ellis BJ, Callaghan JJ, Weiss JA, *Brown TD: The capsule's contribution to total hip construct stability - a finite element analysis. Winner of the William Harris, MD Award. *Journal of Orthopedic Research*, 29(11):1642-1648, 2011.
 73. Chang CC, Krishnan L, Nunes SS, Church KH, Edgar LT, Boland ED, Weiss JA, Williams SK, *Hoying JB: Determinants of microvascular network topology in implanted neovasculatures. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 32(1):5-14, 2011.

74. *Ateshian GA, Albro MB, Maas SA, Weiss JA: Finite element implementation of mechanochemical phenomena in neutral deformable porous media under finite deformation. *Journal of Biomechanical Engineering*, 133(8):1005-1017, 2011.
75. *Peters CL, Anderson LA, Erickson JA, Anderson AE, Weiss JA: An algorithmic approach to surgical decision making in acetabular retroversion. *Orthopedics*, 34(1):10, 2011.
76. Maas SA, Ellis BJ, Ateshian GA, *Weiss JA: FEBio: Finite elements for biomechanics. *Journal of Biomechanical Engineering*, 134(1):011005, 2012.
77. Harris MD, Anderson AE, Henak CR, Ellis BJ, Peters CL, *Weiss JA: Finite element prediction of cartilage contact stresses in normal human hips. *Journal of Orthopaedic Research*, 30(7):1133-9, 2012. **Featured on Journal cover.**
78. Hansen BJ, Harris MD, Anderson LA, Peters CL, Weiss JA, *Anderson AE: Correlation between radiographic measures of acetabular morphology with 3D femoral head coverage in patients with acetabular retroversion. *Acta Orthopaedica*, 83(3):233-9, 2012.
79. Ateshian GA, Maas SA, *Weiss JA: Solute transport across a contact interface in deformable porous media. *Journal of Biomechanics*, 45(6):1023–1027, 2012.
80. Halloran JP, Sibole S, van Donkelaar CC, van Turnhout MC, Oomens CW, Weiss JA, Guilak F, *Erdemir A: Multiscale mechanics of articular cartilage: Potentials and challenges of coupling musculoskeletal, joint, and microscale computational models. *Annals of Biomedical Engineering*, 40(11):2456-74, 2012.
81. Edgar LT, Sibole SC, Underwood CJ, Guilkey JE, *Weiss JA: A Computational model of in vitro angiogenesis based on extracellular matrix fiber orientation. *Computer Methods in Biomechanics and Biomedical Engineering*, 16(7):790–801, 2013. <http://dx.doi.org/10.1080/10255842.2012.662678>
82. Harris MD, Reese SP, Peters CL, Weiss JA, *Anderson AE. Three-dimensional quantification of femoral head shape in controls and patients with cam-type femoroacetabular impingement. *Annals of Biomedical Engineering*, 41(6):1162-71, 2013. <http://dx.doi.org/10.1007/s10439-013-0762-1>
83. Abraham CL, Maas SA, Weiss JA, Ellis BJ, Peters CL, *Anderson AE: A new discrete element analysis method for predicting hip joint contact stresses. *Journal of Biomechanics*, 46(6):1121-7, 2013.
84. Reese SP, *Weiss JA: Tendon fascicles exhibit a linear correlation between lateral strain and Poisson's ratio during uniaxial stress relaxation. *Journal of Biomechanical Engineering*, 135(3), 034501, 2013. <http://dx.doi.org/10.1115/1.4023134>
85. Henak CR, Carruth ED, Anderson AE, Harris MD, Ellis BJ, Peters CL, *Weiss JA: Finite element predictions of cartilage contact mechanics in hips with retroverted acetabula. *Osteoarthritis Cartilage*, 21(10):1522-9, 2013. <http://dx.doi.org/10.1016/j.joca.2013.06.008>
86. *Ateshian GA, Maas S, Weiss JA: Multiphasic finite element framework for modeling hydrated mixtures with multiple neutral and charged solutes. *Journal of Biomechanical Engineering*, 135(11):111001-11, 2013.
87. Henak CR, Anderson AE, *Weiss JA: Subject-specific analysis of joint contact mechanics: application to the study of osteoarthritis and surgical planning. *Journal of Biomechanical Engineering*. 135(2):021003, 2013.
88. Henninger HB, Underwood CJ, Romney SJ, Davis GL, *Weiss JA: Effect of elastin digestion on the quasi-static tensile response of medial collateral ligament. *Journal of Orthopaedic Research*, 31(8):1226-33, 2013. <http://dx.doi.org/10.1002/jor.22352>
89. Reese SP, Underwood CJ, *Weiss JA: Effects of decorin proteoglycan on fibrillogenesis, ultrastructure, and mechanics of Type I collagen gels. *Matrix Biology*, 32(7-8):414-423, 2013. <http://dx.doi.org/10.1016/j.matbio.2013.04.004>

90. Sibole SC, Maas S, Halloran JP, Weiss JA, *Erdemir A: Evaluation of a post-processing approach for multiscale analysis of biphasic mechanics of chondrocytes. *Computer Methods in Biomechanics and Biomedical Engineering*, 6(10):1112-1126, 2013. <http://dx.doi.org/10.1080/10255842.2013.809711>
91. Reese SP, Ellis BJ, *Weiss JA: Micromechanical model of a surrogate for collagenous soft tissues: development, validation, and analysis of mesoscale size effects. *Biomechanics and Modeling in Mechanobiology*, 12(6):1195-1204, 2013. <http://dx.doi.org/10.1007/s10237-013-0475-2>
92. Krishnan L, Chang CC, Nunes SS, Williams SK, Weiss JA, *Hoying JB: Manipulating the microvasculature and its microenvironment. *Critical Reviews in Biomedical Engineering*, 41(2) 2013.
93. Henak CR, Kapron AL, Anderson AE, Ellis BJ, Maas SA, *Weiss JA: Specimen-specific predictions of contact stress under physiological loading in the human hip: validation and sensitivity studies. *Biomechanics and Modeling in Mechanobiology*, 13(2):387-400, 2014. <http://dx.doi.org/10.1007/s10237-013-0504-1>
94. Edgar LT, Underwood CJ, Guilkey JE, Hoying JB, *Weiss JA: Extracellular matrix density regulates the rate of neovessel growth and branching in sprouting angiogenesis. *PLOS one*, 9(1):e85178, 2014. [http://dx.doi.org/10.1371/journal.pone.0085178\(1\)](http://dx.doi.org/10.1371/journal.pone.0085178(1))
95. Rudert MJ, Ellis BJ, Henak CR, Stroud NJ, Pedersen DR, Weiss JA, *Brown TD: A new sensor for measurement of dynamic contact pressure in the hip. *Journal of Biomechanical Engineering*, 136(3):035001, 2014. <http://dx.doi.org/10.1115/1.4026103>
96. Henak CR, Ateshian GA, *Weiss JA: Finite element predictions of transchondral stress and strain in the human hip. *Journal of Biomechanical Engineering*, 136(2):021021, 2014. <http://dx.doi.org/10.1115/1.4026101>
97. Henak CR, Abraham CL, Anderson AE, Maas SA, Ellis BJ, Peters CL, *Weiss JA: Patient-specific analysis of cartilage and labrum mechanics in human hips with acetabular dysplasia. *Osteoarthritis and Cartilage*, 22(2):210-217, 2014. <http://dx.doi.org/10.1016/j.joca.2013.11.003>
98. *Ateshian GA, Nims RJ, Maas S, Weiss JA: Computational modeling of chemical reactions and interstitial growth and remodeling involving charged solutes and solid-bound molecules. *Biomechanics and Modeling in Mechanobiology*, 13(5):1105-1120, 2014. <http://dx.doi.org/10.1007/s10237-014-0560-1>
99. *Hoying JB, Utzinger U, Weiss JA: Formation of microvascular networks: role of stromal interactions directing angiogenic growth. *Microcirculation*, Jan 22, 2014. <http://dx.doi.org/10.1111/micc.12115>
100. Rudert MJ, Ellis BJ, Henak CR, Stroud NJ, Pedersen DR, Weiss JA, *Brown TD: A new sensor for measurement of dynamic contact pressure in the hip. *Journal of Biomechanical Engineering*, 136(3):35001, 2014.
101. Henak CR, Abraham CL, Peters CL, Sanders RK, Weiss JA, *Anderson AE: Computed tomography arthrography with traction in the human hip for three-dimensional reconstruction of cartilage and the acetabular labrum. *Clinical Radiology*, 69(10):381-391, 2014. <http://dx.doi.org/10.1016/j.crad.2014.06.009>.
102. Qian K, Traylor K, Lee SW, Ellis BJ, Weiss JA, *Kamper DG: Mechanical properties vary for different regions of the finger extensor apparatus. *Journal of Biomechanics*, 47(12):3094-3099, 2014.
103. Edgar L, Hoying J, Utzinger U, Underwood CJ, Krishnan L, Baggett B, Maas SA, Guilkey J, *Weiss JA: Mechanical interaction of angiogenic microvessels with the extracellular matrix. *Journal of Biomechanical Engineering*, 136(2):021001, 2014. <http://dx.doi.org/10.1115/1.4026471>

104. Swedberg AM, Reese SP, Maas SA, Ellis BJ, *Weiss JA: Continuum description of the Poisson's ratio of ligament and tendon under finite deformation. *Journal of Biomechanics*, 47(12):3201-3209, 2014.
105. Underwood CJ, Edgar LT, Hoying JB, *Weiss JA: Cell-generated traction forces and the resulting matrix deformation modulate microvascular alignment and growth during angiogenesis. *American Journal of Physiology: Heart and Circulation Physiology* 307(2):H152-64, 2014. <https://doi.org/10.1152/ajpheart.00995.2013>
106. *Ateshian GA, Nims RJ, Maas S, Weiss JA: Computational modeling of chemical reactions and interstitial growth and remodeling involving charged solutes and solid-bound molecules. *Biomechanics and Modeling in Mechanobiology* 13(5):1105-1120, 2014. <http://dx.doi.org/10.1007/s10237-014-0560-1>.
107. Henninger HB, Valdez WR, Scott SA, *Weiss JA: Elastin governs the mechanical response of medial collateral ligament under shear and transverse tensile loading. *Acta Biomaterialia* 24:304-312, 2015. <http://dx.doi.org/10.1016/j.actbio.2015.07.011>
108. Edgar LT, Maas SA, Guilkey JE, *Weiss JA: A coupled model of neovessel growth and matrix mechanics describes and predicts angiogenesis in vitro. *Biomechanics and Modeling in Mechanobiology* 14(4):767-782, 2015. <http://dx.doi.org/10.1007/s10237-014-0635-z>.
109. *Utzinger U, Baggett B, Weiss JA, Hoying JB, Edgar LT: Large-scale time series microscopy of neovessel growth during angiogenesis. *Angiogenesis* 18(3):219-232, 2015. <http://dx.doi.org/10.1007/s10456-015-9461-x>.
110. Edgar LT, Hoying JB, *Weiss JA: In silico investigation of angiogenesis with growth and stress generation coupled to local extracellular matrix density. *Annals of Biomedical Engineering* 43(7):1531-1542, 2015. <http://dx.doi.org/10.1007/s10439-015-1334-3>.
111. Merrell AJ, Ellis BJ, Fox ZD, Lawson JA, Weiss JA, *Kardon G: Muscle connective tissue controls development of the diaphragm and is a source of congenital diaphragmatic hernias. *Nature Genetics* 47(5):496-504, 2015. <http://dx.doi.org/10.1038/ng.3250>.
112. Ateshian GA, Henak CR, *Weiss JA: Toward patient-specific articular contact mechanics. *Journal of Biomechanics* 48(5):779-786, 2015. <http://dx.doi.org/10.1016/j.jbiomech.2014.12.020>.
113. Atkins PR, Elhabian SY, Agrawal P, Harris MD, Whitaker RT, Weiss JA, Peters CL, *Anderson AE: Quantitative comparison of cortical bone thickness using correspondence-based shape modeling in patients with cam femoroacetabular impingement. *Journal of Orthopaedic Research*, October 2016. <http://dx.doi.org/10.1002/jor.23468>
114. Maas SA, Ellis BJ, Rawlins DS, *Weiss JA: Finite element simulation of articular contact mechanics with quadratic tetrahedral elements. *Journal of Biomechanics*, 49(5):659-667, 2016. <http://dx.doi.org/10.1016/j.jbiomech.2016.01.024>
115. Maas SA, Erdemir A, Halloran JP, *Weiss JA: A general framework for application of prestrain to computational models of biological materials. *Journal of the Mechanical Behavior of Biomedical Materials*, 61:499-510, 2016. <http://dx.doi.org/10.1016/j.jmbbm.2016.04.012>
116. Abraham CL, Knight SJ, Peters CL, Weiss JA, *Anderson AE: Patient-specific chondrolabral contact mechanics in patients with acetabular dysplasia following treatment with periacetabular osteotomy. *Osteoarthritis Cartilage*, 25(5):676-684, 2017. <http://dx.doi.org/10.1016/j.joca.2016.11.016>
117. Klennert BJ, Ellis BJ, Maak TG, Kapron AL, *Weiss JA: The mechanics of focal chondral defects in the hip. *Journal of Biomechanics*, 52:31-37, 2017. <http://dx.doi.org/10.1016/j.jbiomech.2016.11.056>
118. Zitnay JL, Li Y, Qin Z, San B-H, Depalle B, Reese SP, Buehler MJ, *Yu SM, *Weiss JA: Molecular level detection and localization of mechanical damage in collagen enabled by

- collagen hybridizing peptides. *Nature Communications*, 22(8):14913, 2017. <http://dx.doi.org/10.1038/ncomms14913>
119. Harris MD, MacWilliams BA, Bo Foreman K, Peters CL, Weiss JA, *Anderson AE: Higher medially-directed joint reaction forces are a characteristic of dysplastic hips: A comparative study using subject-specific musculoskeletal models. *J Biomech*. 2017 Mar 21;54:80-87. doi: <http://dx.doi.org/10.1016/j.jbiomech.2017.01.040>
 120. Abraham CL, Knight SJ, Peters CL, Weiss JA, *Anderson AE: Patient-specific chondrolabral contact mechanics in patients with acetabular dysplasia following treatment with peri-acetabular osteotomy. *Osteoarthritis and Cartilage*, 25(5):676-684, 2017. <https://doi.org/10.1016/j.joca.2016.11.016>
 121. Maas SA, Ateshian GA, *Weiss JA: FEBio: History and advances. *Annual Reviews in Biomedical Engineering*, 19:279-299, 2017. <https://doi.org/10.1146/annurev-bioeng-071516-044738>
 122. Atkins PR, Elhabian SY, Agrawal P, Harris MD, Whitaker RT, Weiss JA, Peters CL, *Anderson AE: Quantitative comparison of cortical bone thickness using correspondence-based shape modeling in patients with cam femoroacetabular impingement. *Journal of Orthopaedic Research*, 35(8):1743-1753, 2017. <https://doi.org/10.1002/jor.23468>
 123. Atkins PR, Aoki SK, Whitaker RT, Weiss JA, Peters CL, *Anderson AE: Does Removal of Subchondral Cortical Bone Provide Sufficient Resection Depth for Treatment of Cam Femoroacetabular Impingement? *Clinical Orthopaedics and Related Research*, 475(8):1977-1986, 2017. <https://doi.org/10.1007/s11999-017-5326-5>
 124. Ruehle MA, Krishnan L, LaBelle SA, Willett NJ, Weiss JA, *Guldberg RE: Decorin-containing collagen hydrogels as dimensionally stable scaffolds to study the effects of compressive mechanical loading on angiogenesis. *MRS Communications*, 7(3):466-471, 2017. <https://doi.org/10.1557/mrc.2017.54>
 125. Knight SJ, Abraham CL, Peters CL, Weiss JA, *Anderson AE: Changes in chondrolabral mechanics, coverage, and congruency following peri-acetabular osteotomy for treatment of acetabular retroversion: A patient-specific finite element study. *Journal of Orthopaedic Research*, 35(11):2567-2576, 2017. <https://doi.org/10.1002/jor.23566>
 126. Zitnay JL, Reese SP, Tran G, Farhang N, Bowles RD, *Weiss JA: Fabrication of dense anisotropic collagen scaffolds using biaxial compression. *Acta Biomaterialia*, 65:76-87, 2018. <https://doi.org/10.1016/j.actbio.2017.11.017>
 127. *Ateshian GA, Shim JJ, Maas SA, Weiss JA: Finite Element Framework for Computational Fluid Dynamics in FEBio. *Journal of Biomechanical Engineering*, 140(2), 2018. doi: <https://doi.org/10.1115/1.4038716>.
 128. Erdemir A, Hunter PJ, Holzappel GA, Loew LM, Middleton J, Jacobs CR, Nithiarasu P, Löhner R, Wei G, Winkelstein BA, Barocas VH, Guilak F, Ku JP, Hicks JL, Delp SL, Sacks M, Weiss JA, Ateshian GA, Maas SA, McCulloch AD, *Peng GCY: Perspectives on Sharing Models and Related Resources in Computational Biomechanics Research. *Journal of Biomechanical Engineering*, 140(2), 2018. <https://doi.org/10.1115/1.4038768>
 129. Kapron AL, Aoki SK, Weiss JA, Krych AJ, *Maak TG: Isolated focal cartilage and labral defects in patients with femoroacetabular impingement syndrome may represent new, unique injury patterns. *Knee Surgery, Sports Traumatology and Arthroscopy*, 27(10):3057-3065, 2019. <https://doi.org/10.1007/s00167-018-4861-2>
 130. Todd JN, Maak TG, Ateshian GA, Maas SA, *Weiss JA: Hip chondrolabral mechanics during activities of daily living: Role of the labrum and interstitial fluid pressurization. *Journal of Biomechanics*, 69:113-120, 2018. <https://doi.org/10.1016/j.jbiomech.2018.01.001>

131. Hou JC, Maas SA, Weiss JA, *Ateshian GA: Finite element formulation of multiphasic shell elements for cell mechanics analyses in FEBio. *Journal of Biomechanical Engineering*, 140(12):121009, 2018. <https://doi.org/10.1115/1.4041043>
132. Maas SA, LaBelle SA, Ateshian GA, *Weiss JA: A plugin framework for extending the simulation capabilities of FEBio. *Biophysical Journal*, 115(9):1630-1637, 2018. <https://doi.org/10.1016/j.bpj.2018.09.016>
133. Zitnay JL, *Weiss JA: Load transfer, damage and failure in ligaments and tendons. *Journal of Orthopaedic Research*, 36(12):3093-3104, 2018. <https://doi.org/10.1002/jor.24134>
134. Atkins PR, Shin Y, Agrawal P, Elhabian SY, Whitaker RT, Weiss JA, Aoki SK, Peters CL, *Anderson AE: Which two-dimensional radiographic measurements of cam femoroacetabular impingement best describe the three-dimensional shape of the proximal femur? *Clinical Orthopaedics and Related Research*, 477(1):242-253, 2019. <https://doi.org/10.1097/corr.0000000000000462>
135. Song K, Anderson AE, Weiss JA, *Harris MD: Musculoskeletal models with generic and subject-specific geometry estimate different joint biomechanics in dysplastic hips. *Computer Methods in Biomechanics and Biomedical Engineering*, 22(3):259-270, 2019. <https://doi.org/10.1080/10255842.2018.1550577>
136. Lin AH, Zitnay JL, Li Y, Yu SM, *Weiss JA: Microplate assay for denatured collagen using collagen hybridizing peptides. *Journal of Orthopaedic Research*, 37(2):431-438, 2019. <https://doi.org/10.1002/jor.24185>
137. Shim JJ, Maas SA, Weiss JA, *Ateshian GA: A formulation for fluid structure-interactions in FEBio using mixture theory. *Journal of Biomechanical Engineering*, 141(5):051010, 2019. <https://doi.org/10.1115/1.4043031>
138. Henninger HB, Ellis BJ, Scott SA, *Weiss JA: Contributions of elastic fibers, collagen, and extracellular matrix to the multiaxial mechanics of ligament. *Journal of the Mechanical Behavior of Biomedical Materials*. 99:118-126, 2019. <https://doi.org/10.1016/j.jmbbm.2019.07.018>
139. Rauff A, LaBelle SA, Strobel HA, Hoying JB, *Weiss JA: Imaging the dynamic interaction between sprouting microvessels and the extracellular matrix. *Frontiers in Physiology*, 10:1011, 2019. <https://doi.org/10.3389/fphys.2019.01011>
140. Klosterhoff BS, Kaiser J, Nelson BD, Karipott SS, Ruehle MA, Hollister SJ, Weiss JA, Ong KG, Willett NJ, *Guldberg RE: Wireless sensor enables longitudinal monitoring of regenerative niche mechanics during rehabilitation that enhance bone repair. *Bone*, 135:115311, 2020. <https://doi.org/10.1016/j.bone.2020.115311>
141. Zitnay JL, Jung GS, Lin AH, Qin Z, Li Y, Yu SM, Buehler MJ, *Weiss JA: Accumulation of collagen molecular unfolding is the mechanism of cyclic fatigue damage and failure in collagenous tissues. *Science Advances*, 6(35):eaba2795, 2020. <https://doi.org/10.1126/sciadv.aba2795>
142. Ruehle MA, Eastburn EA, LaBelle SA, Krishnan L, Weiss JA, Boerckel JD, Wood LB, Guldberg RE, *Willett NJ: Extracellular matrix compression temporally regulates microvascular angiogenesis. *Science Advances*, 6(34):eabb6351, 2020. <https://doi.org/10.1126/sciadv.abb6351>
143. Strobel HA, LaBelle SA, Krishnan L, Dale J, Rauff A, Poulson AM 4th, Bader N, Beare JE, Aliaj K, Weiss JA*, Hoying JB*: Stromal cells promote neovascular invasion across tissue interfaces. *Frontiers in Physiology*, 11:1026, 2020. <https://doi.org/10.3389/fphys.2020.01026>
144. Lin AH, Allan AN, Zitnay JL, Kessler JL, Yu SM, *Weiss JA: Collagen denaturation is initiated upon tissue yield in both positional and energy-storing tendons. Collagen denaturation is initiated upon tissue yield in both positional and energy-storing tendons. *Acta Biomaterialia*, 118:153-160, 2020. <https://doi.org/10.1016/j.actbio.2020.09.056>

145. Shim JJ, Maas SA, Weiss JA, *Ateshian GA: Finite element implementation of biphasic-fluid structure interactions in FEBio. *Journal of Biomechanical Engineering*, 143(9):091005, 2021. <https://doi.org/10.1115/1.4050646>
146. Todd JN, Allan AN, Maak TG, *Weiss JA: Characterization and finite element validation of transchondral strain in the human hip during static and dynamic loading. *Journal of Biomechanics*, 114:110143, 2021. <https://doi.org/10.1016/j.jbiomech.2020.110143>
147. Zimmerman BK, Jiang D, Weiss JA, Timmins LH, *Ateshian GA: On the use of constrained reactive mixtures of solids to model finite deformation isothermal elastoplasticity and elastoplastic damage mechanics. *Journal of the Mechanics and Physics of Solids*, 155:104534, 2021. <https://doi.org/10.1016/j.jmps.2021.104534>
148. Zitnay JL, Lin AH, *Weiss JA: Tendons exhibit greater resistance to tissue and molecular-level damage with increasing strain rate during cyclic fatigue. *Acta Biomaterialia*, 134:435-442, 2021. <https://doi.org/10.1016/j.actbio.2021.07.045>
149. Klosterhoff BS, Vantucci CE, Kaiser J, Ong KG, Wood LB, Weiss JA, Guldberg RE, *Willett NJ: Effects of osteogenic ambulatory mechanical stimulation on early stages of BMP-2 mediated bone repair. *Connective Tissue Research*, 63(1):16-27, 2022. <https://doi.org/10.1080/03008207.2021.1897582>
150. Zimmerman BK, Maas SA, Weiss JA, *Ateshian GA: A finite element algorithm for large deformation biphasic frictional contact between porous-permeable hydrated soft tissues. *Journal of Biomechanical Engineering*, 144(2):021008, 2022. <https://doi.org/10.1115/1.4052114>
151. LaBelle SA, Dinkins SS, Hoying JB, Budko EV, Rauff A, Strobel HA, Lin AH, *Weiss JA: Matrix anisotropy promotes angiogenesis in a density-dependent manner. *American Journal of Physiology, Heart and Circulation Physiology*, 322(5):H806-818, 2022. <https://doi.org/10.1152/ajpheart.00072.2022>
152. Rauff A, Timmins LH, Whitaker RT, *Weiss JA: A nonparametric approach for estimating three-dimensional fiber orientation distribution functions (ODFs) in fibrous materials. *IEEE Transactions on Medical Imaging*, 41(2):446-455, 2022. <https://doi.org/10.1109/tmi.2021.3115716>
153. Todd JN, Maak TG, Anderson AE, Ateshian GA, *Weiss JA: How Does Chondrolabral Damage and Labral Repair Influence the Mechanics of the Hip in the Setting of Cam Morphology? A Finite-Element Modeling Study. *Clinical Orthopaedics and Related Research*, 480(3):602-615, 2022. <https://doi.org/10.1097/corr.0000000000002000>
154. Smith KA, Lin AH, Stevens AH, Yu SM, Weiss JA, *Timmins LH: Collagen molecular damage is a hallmark of early atherosclerosis development. *Journal of Cardiovascular Translational Research*, Online ahead of print, Sept 2022. <https://doi.org/10.1007/s12265-022-10316-y>
155. Allan AN, Zitnay JL, Maas SA, *Weiss JA: Development of a continuum damage model to predict accumulation of sub-failure damage in tendons. *Journal of the Mechanical Behavior of Biomedical Materials*, 135:105342, 2022. <https://doi.org/10.1016/j.jmbbm.2022.105342>
156. Zitnay RG, Herron MR, Carney KR, Potter S, Emerson LL, *Weiss JA, *Mendoza MC: Mechanics of lung cancer: A finite element model shows strain amplification during early tumorigenesis. *PLOS Computational Biology*, 18(10):e1010153, 2022. <https://doi.org/10.1371/journal.pcbi.1010153>
157. Wu W, Ching S, Maas SA, Lasso A, Sabin P, Weiss JA, *Jolley MA: A computational framework for atrioventricular valve modeling using open-source software. *Journal of Biomechanical Engineering*, 144(10):101012, 2022. <https://doi.org/10.1115/1.4054485>
158. *Loganathan R, Yanagisawa H, Gentleman E, Little CD, Weiss JA: Editorial: Extracellular matrix dynamics in biology, bioengineering, and pathology Volume II.

- Frontiers in Cell and Developmental Biology, 10:1105566, 2022. <https://doi.org/10.3389/fcell.2022.1105566>
159. Gaffney BMM, Williams ST, Todd JN, Weiss JA, *Harris MD: A musculoskeletal model for estimating hip contact pressures during walking. *Annals of Biomedical Engineering*, 50(12):1954-1963, 2022. <https://doi.org/10.1007/s10439-022-03016-w>
 160. *Ateshian GA, Petersen CA, Maas SA, Weiss JA: A numerical scheme for anisotropic reactive nonlinear viscoelasticity. *Journal of Biomechanical Engineering*, 145(1):011004, 2023. <https://doi.org/10.1115/1.4054983>.
 161. Lin AH, Slater CA, Martinez CJ, Eppell SJ, Yu SM, *Weiss JA: Collagen fibrils from both positional and energy-storing tendons exhibit increased amounts of denatured collagen when stretched beyond the yield point. *Acta Biomaterialia*, 155:461-470, 2023. <https://doi.org/10.1016/j.actbio.2022.11.018>.
 162. *Ateshian GA, Kroupa KR, Petersen CA, Zimmerman BK, Maas SA, Weiss JA: Damage mechanics of biological tissues in relation to viscoelasticity. *Journal of Biomechanical Engineering*, 145(4):041011, 2023. <https://doi.org/10.1115/1.4056063>
 163. *Ateshian GA, Hung CT, Weiss JA, Zimmerman BK: Modeling inelastic responses using constrained reactive mixtures. *European Journal of Mechanics – A/Solids*, 100:105009, July 2023. <https://doi.org/10.1016/j.euromechsol.2023.105009>
 164. Shim JJ, Maas SA, Weiss JA, *Ateshian GA: Finite element implementation of computational fluid dynamics with reactive neutral and charged solute transport in FEBio. *Journal of Biomechanical Engineering*, 145(9):091011, September 2023. <https://doi.org/10.1115/1.4062594>
 165. Rauff A, Manning JC, Hoying JB, LaBelle SA, Strobel HA, Stoddard GJ, *Weiss JA: Dynamic biophysical cues near the tip cell microenvironment provide distinct guidance signals to angiogenic neovessels. *Annals of Biomedical Engineering*, 51(8):1835-1846, August 2023. <https://doi.org/10.1007/s10439-023-03202-4>
 166. LaBelle SA, Poulson AM 4th, Maas SA, Rauff A, Ateshian GA, Weiss JA: Spatial configurations of 3D extracellular matrix collagen density and anisotropy simultaneously guide angiogenesis. *PLoS Computational Biology*, 19(10):e1011553, October 2023. <https://doi.org/10.1371/journal.pcbi.1011553>
 167. Weston JD, Austin B, Levis H, Zitnay J, Weiss JA, Lawrence B, Bowles RD: Towards the development of a tissue engineered gradient utilizing CRISPR-guided Gene Modulation. *Tissue Engineering Part A*, Accepted February 2024. <https://doi.org/10.1089/ten.tea.2023.0352>

Refereed Conference Papers

- *Schauer DA, Benda B, Weiss JA, Perfect S, Moor E, Kleinberger M: Lower extremity finite element model development. *Proceedings, International Conference on Pelvic and Lower Extremity Injuries*, 263-275, Wash. D.C., December 1995.
- *Weiss JA, Gardiner JC, Quapp KM: Material models for the study of soft tissue mechanics. *Proceedings, International Conference on Pelvic and Lower Extremity Injuries*, 249-261, Wash. D.C., December 4-6, 1995.
- Hansen KA, Barton JK, *Weiss JA: Optical coherence tomography imaging of collagenous tissue microstructure. *Proc. SPIE BIOS 2000 - Biomedical Optics Symposium*, Vol 3914, January 2000.
- *Guilkey JE, Weiss JA: An implicit time integration strategy for use with the material point method. *Proc 1st MIT Conference on Computational Fluid and Solid Mechanics*, 216-219, 2001.

- Veress AI, Weiss JA, Rabbitt RD, Lee JN, *Gullberg GT: Measurement of 3D left ventricular strains during diastole using image warping and untagged MRI images. Proceedings IEEE/EMBS Computers in Cardiology Conference, September 23-26, 2001, 28:165-168.
- Veress AI, Weiss JA, Klein GJ, *Gullberg GT. Quantification of 3D Left Ventricular Deformation using Hyperelastic Warping: Comparisons between MRI and PET Imaging. Proceedings of IEEE/EMBS Computers in Cardiology, Rotterdam, The Netherlands, September 22-25, 29:709-712, 2002.
- Guilkey JE, Zhang Y, Hoying JB, *Weiss JA: Mechanical simulation of multicellular structures with the Material Point Method. Proc 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Madrid, Spain, March 2004.
- *Weiss JA, Veress AI, Bowden AE, Rabbitt RD: Strain measurement with deformable images. Proc 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Madrid, Spain, March 2004.
- Anderson AE, Peters CL, Tuttle BJ, *Weiss JA: Development and validation of a subject-specific finite element model of the pelvis: Assessment of model sensitivity. Proc 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Madrid, Spain, March 2004.
- Veress AI, Segars WP, Tsui BMW, Weiss JA, Gullberg GT: Physiologically realistic LV models to produce normal and pathological image and phantom data. Proceedings of the IEEE Medical Imaging Conference, Rome, October 2004.
- Weiss JA, Veress AI, Gullberg GT, Phatak NS, Sun Q, Parker D: Strain measurement using deformable image registration. Proceedings of the IUTAM Symposium on the Mechanics of Biological Tissue, November 2004.
- Ionescu I, Guilkey J, Berzins M, Kirby RM, Weiss JA: Computational simulation of penetrating trauma in biological soft tissues using the Material Point Method. Proceedings, Medicine Meets Virtual Reality, eds. James D Westwood et al., IOS Press (published in Studies in Health Technology and Informatics, 111:213-8, 2005).
- Ionescu I, Weiss JA, Guilkey J, Cole M, Kirby RM, Berzins M: Ballistic injury simulation using the material point method. Proceedings, Medicine Meets Virtual Reality, eds. James D Westwood et al., IOS Press, (published in Studies in Health Technology and Informatics, 119:228-33, 2005.)
- Guilkey JE, Zhang Y, Hoying JB, *Weiss JA: Mechanical simulation of multicellular structures with the Material Point Method. 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering. Madrid, Spain, 2007.
- *Anderson AE, Maas SA, Ellis BJ, Weiss JA: The mechanical consequences of modeling the hip joint using ideal geometry. Symposium of Computational Methods in Biomechanics and Biomedical Engineering, 2008.
- Adams CR, Ellis BJ, Harris MD, Anderson AE, Peters CL, Weiss JA: The acetabular labrum alters cartilage contact stresses and load transfer across the hip joint. International Symposium of Computer Methods in Biomechanics and Biomedical Engineering. Valencia, Spain, 2010.
- Edgar LT, Maas SA, Guilkey JE, Weiss JA, Angio FE: A continuous-discrete model of angiogenesis that couples vessel growth to matrix deformation. 10th International Symposium, Computer Methods in Biomechanics and Biomedical Engineering. Berlin, Germany, 2012.

Technical Reports and Articles

- Maas SA, Ellis BJ, Rawlins DS, Edgar LT, Henak CR, Weiss JA: Implementation and Verification of a Nodally-Integrated Tetrahedral Element in FEBio. SCI Technical Report, University of Utah, UUSCI-2011-007, 2011.

- *Weiss JA, France EP: A constitutive model and finite element representation for transversely isotropic soft tissue structures. Utah Supercomputing Institute Technical Report #46, July 1994.
- *Weiss JA, Maker BN, Govindjee, S: Finite element implementation of incompressible, transversely isotropic hyperelasticity. U.C. Berkely Report #UCB/SEMM-95-07 June 1995.
- *Puso MA, Laursen T, Weiss JA: Contact improvements in NIKE3D. University of California, Lawrence Livermore National Laboratory Report UCRL-JC-125876, 1996.
- *Puso MA, Weiss JA, Schauer DA: A transversely isotropic hyperelastic shell element. University of California, Lawrence Livermore National Laboratory Report UCRL-JC-121325, 1996.
- *Weiss JA, Veress AI, Bowden AE, Rabbitt RD, Gillies RJ, Galons J-P, Guo J: Local measurements of changes in shape and volume between serial volumetric medical images: Application to Niemann-Pick Type C disease progression. Center for High Performance Computing News, University of Utah, 12(3):1-3, 2001.

Book Chapters

- *Woo SL-Y, Weiss JA, MacKenna DA: Biomechanics and Morphology of the Medial Collateral and Anterior Cruciate Ligaments. In *Biomechanics of Diarthrodial Joints*, eds. VC Mow and SL-Y Woo, Springer-Verlag, 1990.
- Veress AI, Phatak N, *Weiss JA: Deformable Image Registration with Hyperelastic Warping. In *Handbook of Biomedical Image Analysis: Vol. 3, Registration Models (Part A)*, eds. Suri, Wilson, Laxminarayan, pp. 487-534, 2005. ISBN: 0-306-48607-5
- Weiss JA, Veress AI, Gullberg GT, Phatak NS, Sun Q, Parker D, Rabbitt RD: Strain measurement using deformable image registration. In *Mechanics of Biological Tissue*, eds. Holzapfel GA and Ogden RW, pp. XXX-XXX, Springer, 2006. ISBN: 3-540-25194-4.
- Ateshian GA, Weiss JA: Finite Element Modeling of Solutes in Hydrated Deformable Biological Tissues. In, *Computer Models in Biomechanics*, eds. Holzapfel G and Kuhl E, pages 231-249, 2013. http://dx.doi.org/10.1007/978-94-007-5464-5_17
- Reese SP, Ellis BJ, Weiss JA: Multiscale Modeling of Ligaments and Tendons. In *Multiscale Computer Modeling in Biomechanics and Biomedical Engineering*, editor: Gefen A, Springer Berlin Heidelberg, 2013.
- Tibor LM, Weiss JA: Hip cartilage restoration: Overview. In *Hip Arthroscopy and Hip Joint Preservation Surgery*, eds. Nho SJ, Leunig M, Larson CM, Bedi A, Kelly BT, eds, pp. 1081-1097, Springer, New York, 2015.

PLENARY, SEMI-PLENARY AND KEYNOTE TALKS

- Keynote Speaker, Computer Methods in Biomechanics and Biomedical Engineering, “Role of Molecular Level Collagen Damage During Tendon Fatigue”. New York, New York, August 2019.
- HSS Distinguished Lecture, Hospital for Special Surgery, “Structure of Ligaments and Tendons and Implications for Load Transfer, Damage and Failure”, New York City, New York, February 2017.
- Spotlight Speaker, Orthopaedic Research Society Annual Meeting, “Structure of Ligaments and Tendons and Implications for Load Transfer, Damage and Failure”, Orlando, Florida, March 2016.
- Suhren Lecture Distinguished Speaker, Department of Biomedical Engineering, Tulane University, “Interaction of Angiogenic Microvessels with the Extracellular matrix”, October 2016.

- Plenary Lecture, European Society of Biomechanics Annual Meeting, “Interaction of Angiogenic Microvessels with the Extracellular Matrix”, Prague, Czech Republic, July 2015.
- Plenary Speaker, Kevin P. Granata Memorial Lecture, “Patient-specific Analysis of Hip Biomechanics: Effects of Pathomorphology on Articular Contact Mechanics and Load Support”, Virginia Tech, November 2015.
- Keynote Talk, Advances in Tendon Research, From Bench to Bedside, “Mechanical Role of Elastin in Ligaments and Tendons”, Queen Mary, University of London, London, England, September 2015.
- Van Mow Medal Keynote Lecture, “Mechanics of Angiogenesis”, ASME Summer Bioengineering Conference, July 2013.
- Keynote Lecture: “Ongoing Investigations in the Musculoskeletal Research Laboratories”, 8th Annual Utah Biomedical Engineering Conference, The Tower at Rice-Eccles Stadium, Salt Lake City, Utah, September 2012.
- Plenary Talk, “Structure and Function of Ligaments and Tendons”, 10th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Berlin, Germany, April 2012.
- Plenary Talk, “Patient-specific Modeling of the Dysplastic Hip”, 9th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Valencia, Spain, March 2010.
- Plenary Talk, “Verification, Validation and Sensitivity Studies in Computational Biomechanics”, 8th World Biomaterials Congress, Amsterdam, May 2008.
- Plenary Talk, “Computational Modeling of Musculoskeletal Soft Tissues”, Third International Conference on Mechanics of Biomaterials and Tissues, Clearwater, Florida, December 2009.
- Keynote Speaker, 7th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Antibes, France, March 2006.
- Plenary Speaker, 7th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Antibes, France, March 2006
- Keynote Speaker, 6th Annual Biomedical Computation at Stanford Conference, Stanford, California, October 2005.
- Plenary Lecture, International Conference on Computational Bioengineering, Lisbon, Portugal, August 2005.
- Plenary Speaker, 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Madrid, Spain, March 2004

INVITED DEPARTMENT SEMINAR, CONFERENCE AND WORKSHOP TALKS

- Invited Speaker, Case Western University (via Zoom), “Probing Mechanical Damage and Failure of Collagen in Connective Tissues”, November 2023.
- 4-hour Workshop – “FEBio Project, Demo and New Features”, Summer Biomechanics, Bioengineering and Biotransport Conference, Vail, Colorado, June 8, 2023.
- 2-hour Workshop – “FEBio Project, Introduction to FEBio Studio 2 and FEBio 4, Demo of Image-based Modeling Features”, Computer Method in Biomechanics and Biomedical Engineering Symposium, Paris, France, May 4, 2023.
- Invited Speaker, University of Utah Student Computing Club, “Overview of the FEBio Project”, University of Utah, March 3, 2023.
- Invited Speaker, Computational Oncology Research Initiative Seminar Series, “Overview of the FEBio Project and Relevant Features for Cancer Research”, University of Utah, May 23, 2022.
- Invited Speaker, Orthopaedic Research Society Annual Meeting, “Preparing an NIH Biosketch for Research Proposals”. February 2021.

- Invited Speaker, Department of Mechanical Engineering, Texas A&M University, “Probing Molecular Damage and Failure of Collagen in Connective Tissues”, April 2019.
- Invited Speaker, Department of Biomedical Engineering, Case Western University, “Probing Molecular Damage and Failure of Collagen in Connective Tissues”, April 2019.0
- Workshop – “Introducing FEBio 3.0” (with Steve Maas and Gerard Ateshian), 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, New York, NY, August 2019.
- Invited Speaker, Department of Biomedical Engineering and Center for Musculoskeletal Research, University of Rochester, April 2017.
- Invited Speaker, Mechanical Engineering / Biomedical Engineering Joint Seminar, “Probing Molecular Damage and Failure of Collagen in Connective Tissues”, Columbia University, March 2017.
- Invited Speaker, Boise State University, Department of Mechanical and Biomedical Engineering, September 2016.
- Invited Speaker, Bioengineering Seminar Series, Department of Bioengineering, University of Washington, “Patient-specific Analysis of Hip Biomechanics: Studies of Dysplasia and Femoracetabular Impingement”, Seattle, Washington, January 2015.
- Invited Speaker, Bioengineering Seminar Series, Department of Biomedical Engineering, Georgia Tech, “Interaction of Angiogenic Microvessels with the Extracellular Matrix”, Atlanta, Georgia, April 2015.
- Invited Speaker, Department of Bioengineering, Rice University, “Interaction of Angiogenic Microvessels with the Extracellular Matrix”, Houston, Texas, November 2014.
- Invited Speaker, Institute for Computational Engineering and Sciences, University of Texas at Austin, “FEBio: Finite Elements for Biomechanics”, Austin, Texas, November 2014.
- Invited Speaker, Department of Biomedical Engineering, University of Delaware, “Patient-specific Analysis of Hip Biomechanics: Studies of Dysplasia and Femoracetabular Impingement”, April 2014, Newark, DE.
- Invited Speaker for session, “In Vitro Tissue Models”, 2014 World Congress of Biomechanics, Boston, Massachusetts, July 2014.
- Invited Speaker for session, “Computational Joint Biomechanics”, 2014 World Congress of Biomechanics, Boston, Massachusetts, July 2014.
- Invited Speaker for session, “Multiscale Modeling and Simulation in Biomechanics”, 2014 World Congress of Biomechanics, Boston, Massachusetts, July 2014.
- Invited Speaker, “Workshop on Open Source Computational Mechanics Tools for Orthopaedics”, 60th Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, March 2014.
- Invited Faculty Member and Invited Speaker, “Cartilage and Labrum Mechanics in Normal and Pathomorphologic Hips”, International Society for Technology in Arthroplasty (ISTA), Palm Beach, Florida, October 2013.
- Invited Talk, FEBio: “Finite Elements for Biomechanics and Biophysics”, Biomedical Engineering Department, University of Minnesota, April 2012.
- Invited Talk / Webinar, “Verification and Validation in Computational Biomechanics”, for Biomechanics Working Group, Interagency Modeling and Analysis Group and NIH Multiscale Modeling Consortium, April 2011.
- Invited Talk, "Demonstration of new features in FEBio". 1-hour presentation/workshop format, followed by question/answer session, 9th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Valencia, Spain, March 2010.
- Invited Speaker, SIMBIOS Annual Meeting, Stanford University, Stanford, CA, December 2008.
- Invited Speaker, McGowan Institute for Regenerative Medicine Seminar Series, Department of Bioengineering, University of Pittsburgh, April 6, 2006.

- Invited Speaker, Session entitled, “Hemodynamics and Angiogenesis/Angioadaptation”. 5th World Congress of Biomechanics, Munich, July 2006.
- Invited Speaker, “Distribution, Fine Structure and Mechanical Role of Dermatan Sulfate Glycosaminoglycans in the Medial Collateral Ligament”. 5th World Congress of Biomechanics, Munich, July 2006.
- Invited Speaker, McGowan Institute for Regenerative Medicine Seminar Series, Department of Bioengineering, University of Pittsburgh, April 6, 2006.
- Invited Speaker, Tutorial on Soft Tissue Mechanics, XXth Congress of the International Society of Biomechanics and 29th Annual Meeting of the American Society of Biomechanics, Cleveland, Ohio, July 31, 2005.
- Invited Speaker, Department of Orthopaedics, University of Pennsylvania, May 2005
- Invited Speaker, Industrial Advisory Board Meeting, College of Engineering, University of Utah, December 2004
- Invited Speaker, Scientific Computing and Imaging Institute Seminar Series, U. Utah, October 2004
- Invited Speaker, Center for Functional Imaging, Lawrence Berkeley National Laboratory, 8/19/04
- Invited Speaker, Biomedical Engineering Program, University of Calgary, June 2004
- Invited Speaker, International Union of Theoretical and Applied Mechanics, Symposium on Mechanics of Biological Tissue, Graz, Austria, June 2004
- Invited Speaker, Aircast Foundation Orthopaedic Medical Research Grantee Symposium, May 2004.
- Invited Speaker, Department of Biomedical Engineering, Stanford University, April 2004
- Invited Speaker, Mathematical Biology Program, University of Utah, April 2004
- Invited Speaker, Rehabilitation Institute of Chicago, April 2004
- Invited Speaker, Utah Center for Advanced Imaging Research Symposium, Department of Radiology, University of Utah, April 2004.
- Invited Speaker, Department of Bioengineering Seminar Series, University of Utah, February 2004.
- Invited Speaker, Neuromuscular Biomechanics Laboratory (Director – Scott Delp), Stanford University, February 2004.
- Invited Speaker, University of Arizona Biomedical Engineering Program, November 2002
- Invited Speaker, Grand Rounds, Dept. of Orthopedics, University of Utah, November 2001
- Guest Faculty, Course on Arthroscopic Knee Surgery, Park City, UT, August 2001
- Invited Speaker, Department of Orthopaedics, University of Pittsburgh, March 2001
- Invited Speaker, International Symposium for Tendons and Ligaments, February 2001
- Invited Speaker, University of Arizona Aerospace and Mechanical Engineering Seminar Series, April 2000
- Invited Speaker, International Symposium for Tendons and Ligaments, March 2000
- Invited Speaker, Symposium honoring Dr. Fung's 80th Birthday, ASME Summer Mtg, 1999
- Invited Participant, 5th JUSSC (International Conference) on Biomechanics, Japan, 1998
- Invited Speaker, Canadian Society of Biomechanics, Vancouver B.C., July 1996
- Invited Speaker, Comined Orthopaedic Research Society Meeting, San Diego, July 1995

TEACHING

- | | |
|-------------|---|
| Spring 2024 | Biomechanics II (BME 5250 / ME EN 5540 / ME EN 6540), Biomedical Engineering, U. Utah |
| Spring 2024 | Biomechanics Research Seminar (BME 5280/6280), Biomedical Engineering, University of Utah |
| Fall 2023 | Biomechanics Research Seminar (BME 5280/6280), Biomedical Engineering, University of Utah |

Fall 2022	Computational Biomechanics (BME 7210), Biomedical Engineering, University of Utah
Spring 2022	Biomechanics II, (BME 5250 / ME EN 5540 / ME EN 6540), Biomedical Engineering, U. Utah
Fall 2021	Biomechanics I (BME 4250) co-taught with Prof. Timmins, Biomedical Engineering, U. Utah
Spring 2020	Biomechanics II, (BME 5250 / ME EN 5540 / ME EN 6540), Biomedical Engineering, U. Utah
Spring 2019	Bioengineering Thesis Writing and Communication II (BME 4992), Biomedical Engineering, U. Utah (co-taught with Bock, Broadhead, Christensen, Grainger, Palmer and Yu)
Spring 2018	Biomechanics II, (BME 5250 / ME EN 5540 / ME EN 6540), Biomedical Engineering, U. Utah
Spring 2017	Computational Biomechanics (BIOEN 7210), Bioengineering, U. Utah
Fall 2016	Biomechanics I (BIOEN 4250), Bioengineering, U. Utah Biomechanics Research Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2016	Biomechanics Research Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2015	Biomechanics I (BIOEN 4250), Bioengineering, U. Utah Biomechanics Research Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2015	Biosolid Mechanics (BIOEN 7210), Bioengineering, U. Utah Biomechanics Research Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2014	Biomechanics I (BIOEN 4250), Bioengineering, U. Utah Biomechanics Research Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2014	Biomechanics Research Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2013	Biomechanics I (BIOEN 4250), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2013	Biosolid Mechanics (BIOEN 7210), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2012	Biomechanics I (BIOEN 5201), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2012	Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2011	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah

	Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2011	Biosolid Mechanics (BIOEN 7210), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2010	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2009	Biosolid Mechanics (BIOEN 7210), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2008	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2008	Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2007	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2007	Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2006	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2005	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2005	Biosolid Mechanics (BIOEN 7210), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2004	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2004	Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2003	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Spring 2003	Biosolid Mechanics (BIOEN 7210), Bioengineering, U. Utah Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2002	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah <u>Note</u> – addition of NEW Biomechanics Lab with BIOEN 5201 Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah Introduction to Bioengineering (BIOEN 1101), guest lecturer
Spring 2002	Biomechanics Seminar (BIOEN 6480), Bioengineering, U. Utah
Fall 2001	Introduction to Biomechanics (BIOEN 5201), Bioengineering, U. Utah

- Biomechanics Seminar (BIOEN 6900-2), Bioengineering, U. Utah
Introduction to Bioengineering (BIOEN 1101), guest lecturer
- Spring 2001 Biosolid Mechanics (BIOEN 7210), Bioengineering, U. Utah
Biomechanics Seminar (BIOEN 6900-6), Bioengineering, U. Utah
Bioengineering Seminar (BIOEN 6091), Bioengineering, U. Utah
- Fall 2000 Introduction to Biomechanics (BIOEN 5201), guest lecturer,
Introduction to Bioengineering (BIOEN 1101), guest lecturer
- Spring 2000 Physiology for Biomedical Engineers (BME 411/511), team taught,
Biomedical Engineering Program, U. Arizona
Biomechanical Engineering (AME 466/566), guest lecturer, Aerospace/Mechanical
Engineering, University of Arizona
- Fall 1999 Principles of Biomedical Engineering (BME 516), course coordinator, team
taught, Biomedical Engineering Program, University of Arizona
- Mechanical Engineering Design (AME 412B), Project Supervisor, Aerospace/Mechanical
Engineering, University of Arizona
- Spring 1999 Mechanical Engineering Design (AME 412A), Project Supervisor,
Aerospace/Mechanical Engineering, University of Arizona
- Biomechanical Engineering (AME 466/566), Aerospace/Mechanical Engineering, University of
Arizona
- Fall 1998 Principles of Biomedical Engineering (BME 516), team taught, Biomedical
Engineering Program, University of Arizona
- Spring 1997 Advanced Finite Elements (formerly MEEN 646), Mechanical Engineering,
University of Utah
- Fall 1995 Continuum Mechanics (formerly MEEN 630), Mechanical Engineering,
University of Utah
- Spring 1994 Introduction to Biomechanics (formerly BIOEN 532), guest lecturer,
Bioengineering, University of Utah
- 1996-1998 Instructor and Research Director for Sports Medicine Surgery Fellowship (5
Fellows each year), The Orthopedic Specialty Hospital, Salt Lake City, Utah

TRAINEES

Postdoctoral Fellows - Current

Steven LaBelle Postdoctoral Research Associate, 2023 –

Postdoctoral Fellows – Alumni

Shawn P. Reese, Ph.D. Postdoctoral Research Associate, 2013-2016
Currently: Engineer, Facebook Reality Labs, Redmond, Washington

Lowell T. Edgar, Ph.D. Postdoctoral Research Associate, 2014-2015
Currently: Research Engineer, Oxford Heartbeat, London, England, United Kingdom

Clayton Underwood, Ph.D. Postdoctoral Research Associate, 2004-2011
 Currently: Senior Research Scientist, W. L. Gore and Associates, Flagstaff, Arizona

Heath Henninger, Ph.D. Postdoctoral Research Associate, 2010-2012
 Currently: Research Associate Professor, Department of Orthopedics, University of Utah

Irina Ionescu (Perreard), Ph.D. Postdoctoral Research Associate, 2004-2006
 Currently: Health Services Investigator, Department of Anesthesiology, Dartmouth-Hitchcock Medical Center

Qunli Sun, Ph.D. Postdoctoral Research Associate, 2002-2004
 Currently: Research Associate, School of Aerospace and Mechanical Engineering, University of Oklahoma

Alexander Veress, Ph.D. Postdoctoral Research Associate, 2000-2003
 Currently: Research Associate Professor, Department of Mechanical Engineering, University of Washington; Founder and Chief Analyst, Numeric Design Engineering, LLC, Seattle, Washington

Graduate Students – Current

Farhan Muhib Ph.D. student, Bioomedical Engineering, U. Utah, 2022-
 Luke Hudson Ph.D. student, Bioomedical Engineering, U. Utah, 2021-
 Parker Selbo B.S./M.S. student, Biomedical Engineering, 2022-

Graduate Students – Alumni

Alexandra Allen - 2019-2022. (M.S., Biomedical Engineering, 2022). Currently: Associate Product Engineer, Artivion, Austin, Texas

Andrew Anderson - 2001-2007 (Ph.D., Bioengineering, U. Utah, 2007). Currently: Research Professor, Department of Orthopedics, and Adjunct Professor, Department of Biomedical Engineering, University of Utah

Brian Birchler - Ph.D. student, Bioengineering, University of Utah, 2005-06. Currently: Mathematics Teacher and Department Chair, Rowland Hall Private School, Salt Lake City, Utah

Gillian Brest van Kempen - 2001-2003 (M.E., Bioengineering, U. Utah, 2003). Currently: Owner and Chief Catalyst at Catalysis Acupuncture, Anacortes, Washington

Carlos Bonifasi-Lista - 2000-2002 (M.S., Bioengineering, U. Utah, 2000-2002). Currently: Software Biomathematician, BioFire Diagnostics, LLC, Salt Lake City, Utah

Anton E. Bowden - 1995-2003 (Ph.D., Bioengineering, U. Utah, 2003). (co-advisor with R. Rabbitt). Currently: Professor, Department of Mechanical Engineering, Brigham Young University

Michelle Dalton - 2002-2004 (M.S., Bioengineering, U. Utah, 2004).

Rosalina Das - 2001-2003 (M.S., Bioengineering, U. Utah, 2003). Currently: Senior Project Manager, University of Miami, Miami, Florida

Kathleen T. Deffner - 1995-1007 (M.S., Bioengineering, U. Utah, 12/1997). Currently: Director, Science and Development, Nutriex, Salt Lake City, Utah

Shad Dinkins - 2020-2022 (M.S., Biomedical Engineering, U. Utah, 2022).

Lowell T. Edgar 2009-2013 (Ph.D., Bioengineering, University of Utah, 2013).
 Currently: Research Engineer, Oxford Heartbeat, London, England

Krista M. Ellis - 1994-1996 (M.S., Bioengineering, U. Utah, 12/1996)
 Currently: Project Manager, Data Coordinating Center, University of Utah Health Research, Salt Lake City, Utah

Benjamin J. Ellis - 2007-2011 (Ph.D., Bioengineering, U. Utah, 2011). Currently: Research Associate Professor, Biomedical Engineering, University of Utah

- Allen Fung - 2008-2009 (M.S., Bioengineering, U. Utah, 2008). Currently: Manager, Manufacturing/Process Engineering, Allergan, Pleasanton, California
- John C. Gardiner - 1995-2001 (Ph.D., Bioengineering, U. Utah, 2001). Currently: Principal, and Senior Biomechanical Engineer, Injury Biomechanics Group, MEA Forensic Engineers and Scientists, Laguna Hills, California
- Kristi Hansen - 1998-2000 (M.S., Biomedical Engineering, U. Arizona, 2000) (co-advisor with J. Barton, ECE). Currently: Teaching Faculty, Computer Science and Electrical Engineering, BYU Idaho, Sebra, Rexburg, Idaho
- Michael D. Harris - 2007-2013 (Ph.D., Bioengineering, U. Utah, 6/2013) (co-advisor with Andrew Anderson). Currently: Assistant Professor, Department of Physical Therapy, Washington University, St. Louis, MO.
- Corinne Henak - 2008-2013 (Ph.D., Bioengineering, 2013). Currently: Assistant Professor, Department of Mechanical Engineering University of Wisconsin, Madison, WI
- Heath Henninger - 2006-2010 (Ph.D., Bioengineering, U. Utah, 12/2010). Currently: Research Associate Professor, Department of Orthopedics, University of Utah
- Brenden Klennert - 2014-2016 (M.S., Bioengineering, U. Utah, 2016). Currently: Senior Product Development Engineer, Ortho Development Corporation, SLC, Utah
- Rachel Klink - Ph.D. student, Biomedical Engineering, U. Utah, 2021-2023. Currently: Ph.D. student in Coats Laboratory, Department of Mechanical Engineering, University of Utah.
- Laxminarayanan Krishnan - 2000-2007 (Ph.D., Bioengineering, U. Utah, 2007). Currently: Manager, MicroCT and Biomechanics Core Labs – Petit Biotechnology Institute, Georgia Tech
- Steven LaBelle – 2016-2022 (Ph.D., Biomedical Engineering, U. Utah, 2022). Currently: Staff Scientist, Weiss Biomechanics Lab, Department of Biomedical Engineering, University of Utah
- Elana Lapins – 2021-2023 (Ph.D. student, Biomedical Engineering, U. Utah, 2021-). Currently: Ph.D. student, Amy Lenz Lab, Department of Biomedical Engineering, U. Utah.
- Allen Lin – 2016-2022 (Ph.D., Biomedical Engineering, U. Utah, 2022). Currently: Research Scientist at Nexcelom Bioscience, Boston, Massachusetts
- Trevor Lujan - 2002-2007 (Ph.D., Bioengineering, U. Utah, 2007). Currently: Professor of Mechanical and Biomedical Engineering, Boise State University
- Emma Luke – 2019-2023 (Ph.D. student, Biomedical Engineering, U. Utah, 2019-2023). Currently: Ph.D. student, Coats Lab, Department of Mechanical Engineering, U. Utah.
- Steve Maas - 2010-2016 (Ph.D., School of Computing, U. Utah, 2016). Currently, Lead Software Developer, FEBio Project (www.febio.org), University of Utah
- William Newman - 2002-2003 (M.S., Bioengineering, U. Utah, 2003)
- Adam Rauff - 2017-2023 (Ph.D., Biomedical Engineering, U. Utah, 2023). Currently: Postdoctoral Scholar, Guldberg Lab, University of Oregon
- Shawn Reese - 2007-2011 (Ph.D., Bioengineering, U. Utah, 2012) Currently: Founder, Practical Bionics, Renton, Washington
- Scott Sibole - 2007-2009 (M.S., Bioengineering, U. Utah) Currently: Data Scientist, ASICA Limited, Calgary, Alberta, Canada
- Sumedha Singla - 2013-2015 (M.S., Computing, U. Utah, 2015). Currently: Research Scientist, Meta, Pittsburgh, Pennsylvania
- Aaron Swedberg - 2011-2013 (M.S., Bioengineering, U. Utah, 2013). Currently: Quality Engineer, Flexan, Salt Lake City, Utah

Jocelyn Todd - 2015-2020 (Ph.D., Biomedical Engineering, 2020). Currently: **Senior Software Analytics Project Manager, bioMerieux**, Salt Lake City, Utah

Ashley Ward - 1995-1997 (M.S., Bioengineering, U. Utah, 1997). Currently: Research Director, Hughston Sports Medicine Foundation, Atlanta, Georgia

Jared Zitnay 2014-2020 (Ph.D., Biomedical Engineering, U. Utah, 2020). Currently: **Research Scientist, Orthopaedic Research Laboratory, University of Utah Orthopaedic Center, Salt Lake City, Utah**

Graduate Student Committees - Current

Joseph Bail	M.S. student, Mechanical Engineering, 2022-
Caleb Berggren	Ph.D. student, Biomedical Engineering, 2020-
Julia Dunn	Ph.D. student, Biomedical Engineering, 2020-
Tamanna Islam	Ph.D. student, Biomedical Engineering, 2023-
Emmanuel Offei	Ph.D. student, Biomedical Engineering, 2023-
David Jiang	M.S. student, Biomedical Engineering, 2018-
Seth Kussow	Ph.D. student, Biomedical Engineering, 2021-
Anthony Le	Ph.D. student, Biomedical Engineering, 2022-
Hunter Levis	Ph.D. student, Biomedical Engineering, 2020-
Christian Lewis	Ph.D. student, Biomedical Engineering, 2021-
Chisom Nwoye	Ph.D. student, Oncological Sciences, 2023 -
Miranda Pehrson	M.S. student, Biomedical Engineering, 2020-
Cassidy Scovil	M.S. student, Biomedical Engineering, 2020-
Remi Sondaz	Ph.D. student, Biomedical Engineering, 2023-
Matthew Trone	Ph.D. student, Biomedical Engineering, 2020-
Yifan (Jack) Wang	Ph.D. student, Biomedical Engineering, 2020-
Evan Williams	Ph.D. student, Biomedical Engineering, 2019-
William Wolley	Ph.D. student, Biomedical Engineering, 2021-
Christopher Young	Ph.D. student, Biomedical Engineering, 2022-

Graduate Student Committees - Alumni

Megan Aanstoos	M.S. student, Bioengineering, U. Utah, 2006-2008
Christine Abraham	Ph.D. student, Bioengineering, U. Utah, 2009-2013
Ephraim Akyuz	Ph.D., Bioengineering, U. Utah, 2007-2011
Klevis Aliaj	Ph.D. student, Biomedical Engineering, 2015-2021
Alex Allan	M.S. student, Biomedical Engineering, 2020-2021
Quentin Allen	Ph.D. student, Mechanical Engineering, 2015-2020
Michael Anderson	Ph.D., Bioengineering, University of Utah, 1998-2005
Harley Astin	M.S. student, Biomedical Engineering, 2019-2021
Carlos Bonifasi-Lista	Ph.D., Bioengineering, U. Utah, 2005-2009
E. David Bell	Ph.D., Bioengineering, University of Utah, 2016
Gregory Boiczek	Ph.D. student, Biomedical Engineering, 2016- 2022
Matt Converse	Ph.D., Mechanical Engineering, U. Utah, 2018
Nicholas M. Cordaro	M.S., Biomedical Engineering, University of Arizona, May 2000 (co-advisor with J. Szivek, Orthopedics)
Shad Dinkins	M.S. student, Biomedical Engineering, 2020-2022
John Droge	M.S., Bioengineering, University of Utah, 2003
Niloofer Farhang	Ph.D. student, Biomedical Engineering, 2015-2020
Michelle Fitts	Ph.D. student, Bioengineering, University of Utah, 2012-
Rebecca Goldstein	Ph.D. student, Biomedical Engineering, 2015- 2022

Kenji Huff	M.S. student, Biomedical Engineering, 2020-2022
Elliott Hurd	Ph.D. student, Biomedical Engineering, 2017-2022
Matthew Iwamoto	Ph.D., Bioengineering, University of Utah, 2005-2010
Ashley Kapron	Ph.D. student, Bioengineering, U. Utah, 2008-2012
Seung-Jae Kim	M.S., Bioengineering, University of Utah, December 2001
Rich Lisonbee	M.S. student, Biomedical Engineering, 2020-2022
Nan-Wei Liu	M.S., Mechanical Engineering, 2017
Jonathan Marble	M.S., Bioengineering, U. Utah, 2004-2006
Lisa McFadden	Ph.D., Bioengineering, U. Utah, 2005-2009
Susan Moore	Ph.D., Bioengineering, University of Pittsburgh, 2007-2011
Bao Ngugyen	Ph.D., Bioengineering, University of Utah, 1999-03
Nathan Pack	Ph.D., Bioengineering, University of Utah, 2008-2012
Anil Palaparthi	Ph.D. student, Biomedical Engineering, 2015-2021
Shravan Parthasarathy	M.S. student, Biomedical Engineering, 2017-2019
Sam Philp	M.S. student, Biomedical Engineering, 2019-2021
Rinchen Phuntsok	Ph.D., Bioengineering, University of Utah, 2014-
Eric Rainis	M.S., Bioengineering, University of Pittsburgh, 2006
Suhrud Rajguru	Ph.D., Bioengineering, University of Utah, 2000-2006
Brandon Reyes	M.S., Bioengineering, University of Utah, 2005
Meredith Roberts	Ph.D., Bioengineering, University of Utah, 2001-2007
Teri Rosenbaum	Ph.D., Bioengineering, University of Utah, 2002-2007
Prabhav Saraswat	Ph.D., Bioengineering, University of Utah, 2005-2010
Cassidy Scovil	Ph.D. student, Biomedical Engineering, 2020-2022
Kelly Smith	Ph.D. student, Biomedical Engineering, 2017-2022
Joshua Stover	Ph.D. student, Biomedical Engineering, 2015-2020
Carolyn Taylor	Ph.D. student, Biomedical Engineering, 2017-2021
Hallie Thorpe	Ph.D. student, Biomedical Engineering, 2015-2021
Carrie Voychek	Ph.D., Bioengineering, University of Pittsburgh, 2006-2011
Jennifer Walsh	Ph.D. student, Bioengineering, U. Utah, 2002-2004
Philip Wallstadt	Ph.D., Mechanical Engineering, University of Utah, 2009
Jacob Weston	Ph.D. student, Biomedical Engineering, 2020-2023
Justin Wilkins	Ph.D. student, Bioengineering, University of Utah, 2004-
Nicholas Witham	Ph.D. student, Biomedical Engineering, 2018-2023
Stuart Yeoh	Ph.D., Bioengineering, University of Utah, 2016

Undergraduate Students - Current

Emma Kashefsky	B.S. student, Biomedical Engineering. U.Utah, 2023-
Madeline Wagner	B.S. student, Biomedical Engineering. U. Utah, 2022-

Undergraduate Students - Alumni

Alex Allen	B.S./M.S. student, Biomedical Engineering. U.Utah, 2018-2019
Anita Apte	2001-2002 (B.S., Biomedical Engineering, U. Utah, 2003)
Janna Balling	2003-2005 (B.S., Biomedical Engineering, U. Utah, 2005)
Monica Barton	2016-2017 (B.S., Biomedical Engineering, 2017)
Sarah Bentley	2013-2015 (B.S., Mechanical Engineering, 2015)
Eric Carruth	2010-2012 (B.S., Biomedical Engineering, 2012)
Isaiah Davies	2012-2013 (B.S., Biomedical Engineering, 2013)
Ryan Davis	2008-2010 (B.S., Biomedical Engineering, 2010)
Grant Davis	2010-2012 (B.S., Biomedical Engineering, 2012)
Kristen Davis	2008-2010 (B.S., Biomedical Engineering, 2010)

Christine DeDen	2015-2017 (B.S., Biomedical Engineering, 2017)
Shad Dinkins	2018-2020 (B.S., Biomedical Engineering, 2020)
Ben DeViney	2014-2015 (B.S., Biomedical Engineering, 2015)
Chris Evensen	2002-2003 (B.S., Biomedical Engineering, U. Utah, 2004)
NilooFar Farhang	2013-2014 (B.S., Biomedical Engineering, 2014)
Sean Finley	2012-2014 (B.S., Biomedical Engineering, 2015)
Kasey Fisher	2014-2015 (B.S., Biomedical Engineering, 2015)
Taylor Fowers	2014-2015 (B.S., Biomedical Engineering, 2015)
Mike Harris	2005-2008 (B.S., Biomedical Engineering, U. Utah, 2008)
Bryce Hayden	2012 (B.S., Biomedical Engineering, 2012)
Tyler Kaiser	2014-2015 (B.S., Biomedical Engineering, 2015)
Tejas Kode	2006-8 (B.S. Student, Chemical Engineering, 2004-8)
Spencer Lake	2000-2003 (B.S., Biomedical Engineering, U. Utah, 2003)
Shaun Lauer	2010-2012 (B.S., Biomedical Engineering, 2012)
Benjamin Maakestad	1998-1999 (B.S., Mech Engineering, U. Arizona, 1999)
Jason Manning	2017-2021 (B.S., Biomedical Engineering, U. Utah)
Callie-Jo Martinez	2018 - 2021 B.S. student, Biomedical Engineering, U. Utah
Jeff McCann	2002-2003 (B.S., Biomedical Engineering, U. Utah, 2003)
William Newman	2000-2002 (B.S., Mathematics, University of Utah, 2002)
Hoa Nguyen	2004-2006 (B.S., Biomedical Engineering, U. Utah, 2006)
Casey Olsen	2004-2005 (B.S. student, BME, U. of Utah, 2003-)
Tim Plaizier	2003-2004 (B.S., Electrical Engineering, U. Utah, 2004)
Marsh Poulson	2016-2018 (B.S., Computer Science, 2018)
Daniel Rojas	2013-2014 (B.S., Biomedical Engineering, 2014)
Sara Scott	2013-2015 (B.S., Biomedical Engineering, 2015)
Matt Simmons	2000-2001 (B.S., Chemical Engng, U. Utah, 2002)
Michael Small	2001-2003 (B.S., Chemistry, University of Utah, 2003)
Thomas Stock	2010-2012 (B.S., Biomedical Engineering, U. Utah, 2012)
Yenni Thi	2016-2018 (B.S., Biomedical Engineering, U. Utah, 2018)
James Thomas	2002 (B.S., Biomedical Engineering, U. Utah, 2003)
Brent Thompson	2003-2006 (B.S., Biomedical Engineering, U. Utah, 2006)
Garvin Tran	2014-2016 (B.S., Biomedical Engineering, 2016)
Ben Tuttle	2002-2004 (B.S., Biomedical Engineering, U. Utah, 2004)
William Valdez	2012-2014 (B.S., Biomedical Engineering, U. Utah, 2014)
Philip Waldis	2016 - 2018 (B.S., Biomedical Engineering, U. Utah, 2018)
Michael Wessman	2000-2002 (B.S., Chemical Engng, U. Utah, 2003)
ChaiDee Woods	2014-2015 (B.S., Biomedical Engineering, 2016)
Thomas Ward	2005-2006 (B.S., Biomedical Engineering, U. Utah, 2006)
Michael Young	2014-2016 (B.S., Biomedical Engineering, 2016)
Jinggong “Kinsley” Zheng	2013-2014 (B.S., School of Computing, 2014)

EMPLOYEES

Employees – current

Steve A. Maas, Ph.D.	Lead Software Developer, FEBio Project, 2005 -
Michael R. Herron, M.S.	Software Developer, FEBio Project, 2018 -

Employees – alumni

Grant Review Panel, NSF CAREER Awards, Division of Bioengineering and Environmental Systems, 11/2002, 11/2003, 11/2004

Grant Review Panel, NSF Division of Bioengineering and Environmental Systems, 12/2001, 1/2006

Reviewer, ASME Undergraduate Student Paper Competition, for ASME IMECE '02

External Referee, Grant Review, University of Connecticut Health Center Faculty Development Grants, 2/2002

External Referee, Workers' Compensation Board of BC, 3/2002

External Referee, Grant Review, Canadian Institutes of Health Research, 11/2001

Member, NIH/NIAMS Review Committee for Clinical Trials, 3/2001

External Referee, Grant Review, Veteran's Administration, 1/2000

Grant Review Committee, Orthopaedic Research Laboratories Alumni Council, 1999

External Referee, Grant Review, Medical Research Council of Canada, 11/1998

Organization and Chairing at Scientific Meetings

Scientific Committee, International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Vancouver, Washington, 2024.

Scientific Committee, International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Paris, France, 2023.

Program Committee, Orthopaedic Research Society Annual Meeting, 2017-2019.

Program Chair, Summer Biomechanics, Biotransport and Bioengineering Conference (SB3C, www.sb3c.com), Snowbird, Utah, June 2015.

Scientific Committee for European Society of Biomechanics, Prague, Czech Republic, 2015

Track Chair, Orthopaedics and Rehabilitation Track, Biomedical Engineering Society Annual Meeting, San Antonio, Texas, October 2014.

Symposium Chair (organized three sessions with Co-Chair Professor Ben Ellis), "FEBio Methods and Applications", 7th World Congress of Biomechanics, Boston, Massachusetts, July 2014.

Scientific Committee, International Conference on Computational and Experimental Biomedical Sciences, Ponta Delgada, S Miguel Island, Azores, October 20-22, 2013.

Conference Chair, 11th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Salt Lake City, Utah, 2012-2013 (cmbbe13.sci.utah.edu).

Program Chair, Summer Biomechanics, Bioengineering and Biotransport Conference, Snowbird, Utah, June 2015.

Scientific Committee, VipIMAGE2013 – 4th ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing, Algarve, Portugal, October 2013.

Technical Advisory Panel, 10th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Berlin, Germany, 2011-2012.

Scientific Committee, 18th Congress of the European Society of Biomechanics, Lisbon, Portugal, 2011-2012.

Scientific Committee, VipIMAGE2011 - 3rd ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing, Algarve, Portugal, October 2011.

Scientific Committee, 5th International Congress on Computational Bioengineering, Mazatlán, México, November 2011.

Scientific Committee, International Conference on Computational Bioengineering, Bologna, Italy, September 2009.

Program Committee, CompIMAGE (Computational Modeling of Objects Represented in Images), May 2010.

Technical Advisory Panel, 9th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Valencia, Spain, 2009-2010.

Scientific Committee, Fourth International Conference on Computational Bioengineering, Bologna, Italy, September 2009.

Session Chair, “Modeling”, 8th World Biomaterials Congress, Amsterdam, May 2008

Track Co-Chair, Orthopaedics and Rehabilitation Engineering, 2006 Annual Meeting of the Biomedical Engineering Society, October 2006.

Session Chair, “Orthopedic & Rehabilitation Engineering – Joint Biomechanics”, 2006 Annual Meeting of the Biomedical Engineering Society, October 2006.

Session Chair, “Orthopedic & Rehabilitation Engineering - Soft Tissue Mechanics”, 2006 Annual Meeting of the Biomedical Engineering Society, 2006 Annual Meeting of the Biomedical Engineering Society, October 2006.

Session Chair, “Hemodynamics and Angiogenesis/Angioadaptation”, 5th World Congress of Biomechanics, Munich Germany, Jan 2006.

Organized and recruited Invited and Keynote Speakers for Topic, "Computational Biomechanics and Mechanobiology of Musculoskeletal Soft Tissues", 5th World Congress of Biomechanics, December 2005 / January 2006.

Scientific Committee, 5th World Congress of Biomechanics, 2005-2006

Scientific Committee, 7th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Antibes, France, March 2006

Scientific Committee, II International Conference on Computational Bioengineering, Lisbon, Portugal, September 2005.

Co-Chaired session on Computational Bioengineering, Biomedical Engineering Society Meeting, Baltimore, MD, September 2005

Scientific Committee, 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Madrid, Spain, February 2004

Program Committee, 3rd International Symposium on Ligaments and Tendons, New Orleans, LA, February 2003

Organized A/V services at ASME Summer Bioengineering Conference, 2001

Chaired sessions at ASME Summer Bioengineering Conference, 2001

Organizing Committee, International Symposium on Ligaments and Tendons, February 2001

Organized/chaired 3 sessions, "Soft Tissue Mechanics", ASME Winter Meeting, November 1999 (with G. Ateshian and R. Debski)

Organized/chaired 3 sessions, "Computational Biosolid Mechanics", ASME Summer Bioengineering Conference, 1997 (with J-K. Suh)

Co-chaired session, Soft Tissue Biomechanics, 4th annual Computational Biomechanics Symposium, 1996 (with Jean Heegaard)

Organized/chaired sessions on Computational Bioengineering, ASME Summer Bioengineering Conference, 1995

Committee Membership

I have been a member of a number of mentoring committees for faculty at the University of Utah, including Profs. Tamara Bidone, Robert Bowles, Tara Deans, Claire Acevedo, Luke Timmins, Amy Lenz, and Alfonsus Ng.

Mentor to New Faculty, Orthopaedic Research Society, 2022

Member, Graduate Council Review Committee for Nutrition and Integrative Physiology Graduate Programs, 2021-2022

BME strategic planning subcommittee, 2021

Member, BME Faculty Workload Committee, 2019-2020

Director of the Biomechanics Track in the BME graduate program, 2001 – present.

Member Faculty Search Committee, Scientific Computing and Imaging Institute, 2019.

Member, Faculty Search Committee, Scientific Computing and Imaging Institute, 2018.

Member, Limited Submissions Committee, University of Utah, 2017 – 2019.
 Member, Faculty Search Committee, Department of Bioengineering, 2015-2016.
 Member, Faculty Search Committee, Department of Bioengineering, 2013.
 Member, Limited Submissions Committee, University of Utah, 2014-2016.
 Chair, Graduate Fellowships Committee, Bioengineering, U. Utah, '02-03, '03-04, '04-05, '05-06, '14-15, '15-16, '16-17, '17-18, '18-19, '21-22
 Chair, RPT Committee, Department of Bioengineering, U. Utah, 2012-2014.
 Chair, Biomedical Engineering Retention Promotion and Tenure Committee, 2012, 2013, 2014
 Chair, Faculty Search Committee, Department of Bioengineering, U. Utah, 2008.
 Chair, Graduate Admissions Committee, Bioengineering, U. Utah, '05-06, '06-07, '07-08, '08-09
 Member, Graduate Admissions Committee, Bioengineering, U. Utah, '00-01, '01-02, '02-03, '03-04, '04-05, '09-10, '10-11, '11-12, '12-13, '13-14, '14-15, '15-16, '16-17, 17-18, 18-19, 19-20, 21-22
 Member, Biomedical Engineering Retention Promotion and Tenure Committee, 2003, 2008, 2015, 2020, 2022
 Member, Fellowships Committee, Bioengineering, U. Utah, '00-01, '01-02, '06-07, '07-08, '08-09
 Chair, Graduate Program Affairs Committee, Bioengineering, '05-06, '06-07, '07-08, '08-09
 Member, Graduate Program Affairs Committee, Bioengineering, U. Utah, '00-01, '01-02, '02-03', '03-04, '04-05, '09-10, '10-11, '11-12, '12-13, '13-14, '14-15, '15-16, '16-17, 17-18, 18-19
 Co-chair, Graduate Admissions Committee, Biomedical Engineering, U. Arizona, 2000
 Member, Campus Planning Advisory Committee, University of Utah, '04-05
 Member, Faculty Search Committee, Biomedical Engineering, U. Arizona, 1999
 Member, College Computing Committee, U. Utah, '02-03, '03-04
 Member, College Council, College of Engineering, U. Utah, '01-02, '02-03
 Security Officer, College of Engineering, U. Utah, '01-02, '02-03, '03-04, '04-05
 ASME Bioengineering Solid Mechanics Committee, 1993 - present

SOCIETIES

American Institute for Medical and Biological Engineering, since (Fellow)
 American Society of Mechanical Engineers, since 1989 (Fellow)
 American Society of Biomechanics, since 1988 (Member)
 Orthopaedic Research Society, since 1989 (Fellow)
 Biomedical Engineering Society, since 1986 (Member)

GRANTS

Current, Extramural

Title: Regenerative Rehabilitation of Complex Musculoskeletal Injuries

Organization: National Institutes of Health (2R01AR069297)

Role in Project: Co-Investigator (PI – Robert Guldberg)

Dates: 2/15/2022 – 2/14/2027

Title: Targeting Mechanical Damage using Collagen Hybridizing Peptides

Organization: National Institutes of Health (R01AR071358)

Role in Project: Principal Investigator (with co-PI Michael Yu, University of Utah)

Dates: 5/5/2018 - 4/30/2024 (NCE 2023-2024)

Title: Lab-to-Lab Training and Dissemination for the FEBio Software Suite

Organization: National Institutes of Health (U24EB029007)

Role in Project: Principal Investigator

Dates: 07/01/19 – 06/30/24

Title: FEBio: Finite Elements for Biomechanics

Organization: National Institutes of Health (R01GM083925)

Role in Project: Principal Investigator (with co-PI Gerard Ateshian, Columbia University)

Dates: 9/1/2020 - 8/31/2024

Title: Morphological and Biomechanical Insights into the Pathophysiology of Femoroacetabular Impingement Syndrome

Organization: National Institutes of Health (1R01AR077636)

Role in Project: Co-Investigator (PI – Andrew Anderson, Dept. of Orthopaedics, U. Utah)

Dates: 7/1/2020 – 6/30/2025

Title: Computational and Statistical Framework to Model Tissue Shape and Mechanics

Organization: National Institutes of Health (2R01EB16701)

Role in Project: Co-Investigator (PI – Andrew Anderson, Dept. of Orthopaedics, U. Utah)

Dates: 8/1/2020 – 7/31/2024

Title: Cancer Invasion: Reciprocity Between the Extracellular Matrix and Intrinsic ERK signaling

Organization: National Institutes of Health (1R01CA255790-01A1)

Role in Project: Co-Investigator (PI – Michelle Mendoza, Huntsman Cancer Institute, U. Utah)

Dates: 3/1/2022 – 2/28/2026

Current, Intramural

Title: Mechanobiology of Early Lung Cancer

Organization: Cell Response and Regulation Program, Huntsman Cancer Institute

Role in Project: Co-Investigator

Dates: 1/1/2024 – 12/31/2024

Completed

Title: Understanding the Source and Signal for Tenascin-C Expression in Lung Adenocarcinoma

Organization: Computational Oncology Research Initiative, Huntsman Cancer Institute

Role in Project: Co-PI

Dates: 5/2/2021 – 4/30/2022

Title: Neovessel Guidance in Angiogenesis

Organization: National Institutes of Health (R01HL131856)

Role in Project: Principal Investigator (with co-PI James B. Hoying, Advanced Solutions Inc.)

Dates: 12/15/2016 - 11/30/2020 (NCE to 5/31/2022)

Title: Mechanical Regulation of Vascular Growth and Remodeling

Organization: National Institutes of Health (1R01AR069297-01A1)

Dr. Weiss' Role in Project: Co-Investigator (PI – Robert Guldborg, University of Oregon)

Dates: 4/1/2016 - 3/31/2021

Title: Image Based Modeling, Simulation, and Visualization Summer Course for Biomedical Researchers

Organization: National Institutes of Health (R25GM107009)

Role in Project: Principal Investigator (with Ross T. Whitaker and Robert S. Macleod)

Dates: 09/01/2013 to 08/31/2018

Title: Open Knee(s): Virtual Biomechanical Representations of the Knee Joint

Organization: National Institutes of Health (R01GM104139)

Role in Project: Co-Investigator

Principal Investigator: Ahmet Erdemir

Dates: 09/16/2013 – 05/31/2018

Title: Computational Framework for Multiscale Mechanics of Connective Tissues

Organization: National Institutes of Health (1R01GM083925)

Role in Project: Principal Investigator

Dates: 9/1/2012 - 8/31/2017

Title: Population-Based Shape and Biomechanical Analysis of Hip Pathoanatomy Organization: National Institutes of Health (R01EB016701)

Role in Project: Co-Investigator

Principal Investigator(s): Andrew E. Anderson

Dates: 08/01/2013 to 07/31/2017

Title: Origins of Elasticity and Viscoelasticity in Ligaments

Organization: National Institutes of Health (2R01AR047369)

Role in Project: Principal Investigator

Dates: 9/15/2010 - 08/31/2016

Title: Biomechanics of the Dysplastic Hip

Organization: National Institutes of Health (1R01AR053344)

Role in Project: Principal Investigator

Dates: 07/01/2007 - 06/30/2013

Title: Angiogenesis and the Extracellular Matrix

Organization: National Institutes of Health (1R01HL077683)

Role in Project: Principal Investigator

Dates: 7/1/08 - 6/30/13

Title: Predicting Cell Deformation from Body Level Mechanical Loads

Organization: National Institutes of Health (R01EB009643)

Role in Project: Co-Investigator

Principal Investigator(s): Ahmet Erdemir

Funding Source: National Institutes of Health

Dates: 08-01-2009 to 07-31-2013

Title: Mechanisms Impairing Finger Extension Following Stroke

Organization: National Institutes of Health (1R01NS052369)

Role in Project: Co-Investigator

Principal Investigator(s): Derek Kamper

Subcontract from: Rehabilitation Institute of Chicago

Subcontract PI: Jeffrey Weiss
Dates: 12/15/2007 - 08/31/2012

Title: Fabricated Microvascular Networks
Organization: National Institutes of Health (1R01EB007556)
Role in Project: Co-Investigator
Principal Investigator(s): James Hoying
Subcontract from: University of Louisville
Subcontract PI: Jeffrey Weiss
Dates: 07/10/2007 - 04/30/2011

Title: Improved Cardiac SPECT-CT with Converging Hole Collimation
Organization: National Institutes of Health (R01 EB000121)
Role in Project: Co-Investigator
Principal Investigator(s): Grant T. Gullberg
Subcontract from: Lawrence Berkeley National Laboratory
Subcontract PI: Larry Zeng
Dates: 07/01/2007 - 06/30/2011

Title: Preoperative Planning for Surgical Treatment of Hip Dysplasia
Organization: University of Utah Research Foundation
Role in Project: Principal Investigator
Co-Investigator(s): Andrew Anderson, Christopher Peters
Dates: 01-01-2010 to 12-31-2010

Title: Capsular Restraints to Total Hip Dislocation
Organization: National Institutes of Health (1R01AR053553-01)
Role in Project: Co-Investigator (PI on subcontract to Utah)
Principal Investigator(s): Thomas D. Brown
Subcontract from: University of Iowa
Subcontract PI: Jeffrey Weiss
Dates: 9/25/06 – 8/31/10

Title: Efficient Methods for Multi-Domain Biomechanical Simulations
Organization: National Institutes of Health (1R01EB006735-01)
Role in Project: Co-Investigator (PI on subcontract to Utah)
Principal Investigator(s): Antonie Van Den Bogert
Subcontract from: Cleveland Clinic
Dates: 10/1/06 – 9/30/09

Title: Glenohumeral Joint Stability: Role of the Capsule
Organization: National Institutes of Health (NIAMS #1R01AR050218-01A1)
Role in Project: Co-Investigator (PI on subcontract to Utah)
Principal Investigator: Richard Debski, Dept of Orthopaedics, University of Pittsburgh
Dates: 4/1/2004 - 3/31/2009

Title: Origins of Elasticity and Viscoelasticity in Knee Ligaments
Organization: National Institutes of Health (NIAMS #2R01AR047369-05)
Role in Project: Principal Investigator
Dates: 9/1/04 - 8/31/09

Organization: National Science Foundation, Biomedical Engineering and Aiding the Disabled, #BES-0134503

Title: CAREER: In vivo quantification of tissue deformation and growth from medical image data

Role in Project: Principal Investigator

Dates: 9/2002 - 8/2007

Organization: Orthopaedic Research and Education Foundation

Title: Comparative Stress Analysis of Hip Dysplasia

Role in Project: Co-Principal Investigator

Principal Investigator: Chris Peters

Dates: 7/1/04 - 12/31/06

Organization: Department of Orthopedics / Chris Peters, M.D., University of Utah

Title: Computational modeling of total hip arthroplasty: development and validation

Role in Project: co-Principal Investigator

Dates: 8/1/01 - 7/31/05

Organization: Department of Energy

Title: Center for Simulation of Accidental Fires and Explosions (CSAFE)

Role in Project: Consultant

Principal Investigator: David Pershing

Dates: 10/1/1997 - 11/30/2008

Organization: National Institutes of Health, #R01-EB000121-14

Title: Improved Cardiac SPECT with convergent hole collimators

Role in Project: Co-Investigator

Principal Investigator: Grant T. Gullberg, Department of Radiology, University of Utah

Dates: 4/1/2002 - 3/31/2006

Organization: DARPA

Title: Virtual Soldier: Cardiothoracic Models

Role in Project: Co-Principal Investigator

Principal Investigator: Chris Johnson

Dates: 10/1/2004 - 8/31/2005

Organization: National Institutes of Health (NIAMS), #R01-AR47369-01

Title: Mechanics of the MCL in Normal and ACL-Deficient Knees

Role in Project: Principal Investigator

Dates: 9/1/2000 - 8/31/2004

Organization: National Institutes of Health (NCRR, #1 S10 RR017214-01

Title: Proteins to Populations: A Metacluster for Bioinformatics

Role in Project: Co-Investigator

Principal Investigator: Julio Facelli

Dates: 10/1/02-9/30/04

Organization: Whitaker Foundation (Transition Grant)

Title: Function of Capsuloligamentous Structures at GH Joint

Role in Project: co-Investigator (PI on subcontract to Utah)

Principal Investigator: Richard Debski, Dept of Orthopaedics, University of Pittsburgh
 Dates: 9/1/2003 - 8/31/2004

Organization: University of Utah Funding Incentive Seed Grant 51003026
 Title: "Patient-Specific Computational Models for Preoperative Surgical Planning of Total Hip Arthroplasty and Correction of Hip Dysplasia ."
 Role in Project: Co-Principal Investigator
 Principal Investigator: Chris Peters, Department of Orthopedics, University of Utah
 Dates: 3/01/2003 – 02/29/04

Organization: Department of Orthopedics / Robert T. Burks, M.D., University of Utah
 Title: Mechanics of Meniscal Replacement
 Amount: \$90,000 total (postdoctoral fellow salary)
 Role in Project: co-Principal Investigator
 Dates: 8/1/01 - 7/31/04

Organization: The Whitaker Foundation, #RG-99-0376
 Subcontract from University of Pittsburgh, PI - Richard Debski
 Title: Function of the capsuloligamentous structures at the glenohumeral joint during a simulated clinical exam
 Role in Project: Principal Investigator
 Dates: 9/2000 - 8/2003

Organization: The Aircast Foundation, #RF699
 Title: Effect of anti-angiogenic treatment on ligament healing
 Role in Project; Principal Investigator
 Dates: 12/1/2000 - 11/30/2002

Organization: National Institutes of Health (NCI), #1R01 CA82813-01A2
 Subcontract from University of Arizona
 Title: Registration of high resolution volumetric MRI Images of the Brain
 Role in Project: Co-Investigator
 Principal Investigator: Robert J. Gillies
 Dates: 5/1/2001 - 5/31/2002

Organization: Parseghian Foundation
 Subcontract from University of Arizona
 Title: Registration of high-resolution volumetric MRI images of the brain
 Amount: \$50,311 total for subcontract
 Role in Project: Co-Investigator
 Principal Investigator: Robert J. Gillies
 Dates: 11/2000 - 4/2002

Organization: Howmedica/Osteonics
 Title: Mechanical analysis of patellar components for total knee arthroplasty
 Role in Project: Principal Investigator
 Dates: 8/1/01 - 11/30/02

Organization: The Whitaker Foundation Transitional Grants
 Title: Compressibility and Permeability Studies of the Medial Collateral Ligament

Role in Project: Principal Investigator
 Dates: 3/1999 - 7/2000

Organization: National Institutes of Health (NIDCD #PO1-DC01837)
 Title: Neural mechanisms of vestibular function in fish (program project)
 Role in Project: Co-Investigator
 Principal Investigator, Project 2: Richard D. Rabbitt
 Dates: 4/1/1999 - 3/31/2004

Organization: National Institutes of Health (NIDCD #RO1-DC03658)
 Title: Mechanics of angular motion transduction by the semicircular canals (RO1)
 Role in Project: Co-Investigator
 Principal Investigator: Richard D. Rabbitt
 Dates: 12/1/1998 - 11/30/2003

Organization: General Motors/NHTSA
 Title: Material models for ligament and annulus fibrosis - implementations for membrane and solid finite elements.
 Role in Project: Principal Investigator
 Dates: 2/1/1999 - 6/30/2000

Organization: General Motors/Delphi
 Title: Development of a deformable human finite element model for biomechanical analyses of automobile passenger ergonomics
 Role in Project: Principal Investigator
 Dates: 2/1/1997 - 7/31/1998

Organization: The University of Utah Technology Innovation Grants
 Title: Software to Incorporate Image Data into Continuum Mechanics Analyses
 Role in Project: Co-Principal Investigator
 Principal Investigator: Richard D. Rabbitt, Department of Bioengineering, U. Utah
 Dates: 7/1996 - 6/1998

Organization: General Motors/NHTSA
 Title: Development of 1D and 3D finite element representations for passive and active muscle behavior.
 Role in Project: Principal Investigator
 Dates: 2/1/1997 - 1/31/1998

Organization: Lawrence Livermore National Laboratory
 Laboratory-Directed Research and Development
 Title: A new approach to orthopedic implant design
 Role in Project: Co-Principal Investigator
 Dates: 10/1995 - 9/1997

Organization: The Whitaker Foundation
 Title: Computational Modeling of Ligament Mechanics
 Role in Project: Principal Investigator
 Dates: 4/1995 - 10/1998

Organization: Foundation for Sports Medicine Education and Research

Title: Microvasculature of the Normal and Healing Medial Collateral Ligament and its Insertions to Bone.

Role in Project: Co-Principal Investigator

Dates: 2/1993 - 2/1994

Organization: Biomet, US Surgical

Title: Augmentation of a tendon healing model with a bioresorbable patch: Biomechanical and histological study.

Role in Project: Principal Investigator

Dates: 3/1992 - 8/1993

Organization: Deseret Foundation, LDS Hospital

Title: Numerical Model to study Kinematics of Normal and Injured Knees.

Role in Project: Principal Investigator

Dates: 9/1991 - 8/1992

CONSULTING

Amedica, Inc., Salt Lake City, UT

Bard Access Systems, Salt Lake City, UT

Collagen Matrix, Inc., Franklin Lakes, NJ

Delphi Automotive Systems, MI

Easton Technical Products, Inc., Salt Lake City, UT

General Motors, MI

Genzyme Corporation, Framingham, MA

Kenyon and Kenyon Intellectual Property Law, New York, NY

Megadyne Medical Products, Salt Lake City, UT

Microsoft, Redmond, WA

Mrazek Cycles, Salt Lake City, UT

Law Offices of Risner and Graham, Tucson, AZ

Law Offices of Trask, Britt, and Rossa, Salt Lake City, UT