Stanford



Scott L. Delp, Ph.D.

Director, Wu Tsai Human Performance Alliance at Stanford, James H. Clark Professor in the School of Engineering, Professor of Bioengineering and of Mechanical Engineering

CONTACT INFORMATION

- **Alternate Contact**

  Lisa Stainton - Executive Assistant & NMBL Coordinator

  Email lisa98@stanford.edu

Bio

BIO

Scott L. Delp, Ph.D., is the James H. Clark Professor of Bioengineering, Mechanical Engineering, and Orthopaedic Surgery at Stanford University. He is the Founding Chairman of the Department of Bioengineering at Stanford, and Director of the Wu Tsai Human Performance Alliance at Stanford, a university-wide research initiative focused on discovering biological principles to optimize human performance and catalyze innovations in human health for all. Dr. Delp is also the Director of the Restore Center, an NIH national center focused on measuring real world rehabilitation outcomes, and Director of the Mobilize Center, a NIH National Center of Excellence focused on Big Data and Mobile Health. Scott is focused on developing technologies to advance movement science and human health. Software tools developed in his lab, including OpenSim and Simtk.org, have become the basis of an international collaboration involving thousands of students and scientists who exchange simulations of human movement. Prior to joining the faculty at Stanford, Delp was on the faculty at Northwestern University and the Rehabilitation Institute of Chicago. He has published over 325 research articles in the field of biomechanics and has published a textbook from MIT Press entitled Biomechanics of Movement: The Science of Sports, Robotics, and Rehabilitation. Professor Delp has co-founded six health technology companies and is a member of the U.S. National Academy of Engineering.

ACADEMIC APPOINTMENTS

- Professor, Bioengineering
- Professor, Mechanical Engineering
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director, Wu Tsai Human Performance Alliance, (2021- present)
- Director, Restore Center, (2020- present)
- Director, Mobilize Center: NIH National Center of Excellence for Big Data in Mobile Health, (2014- present)
- Director, National Center for Simulation in Rehabilitation Research (NCSRR), (2010-2021)
- Chairman, Bioengineering Department, (2002-2007)

- Co-Director, NIH Center for Biomedical Computation at Stanford (Simbios), (2001-2012)
- Chairman, Biomechanical Engineering Division, (2000-2002)

HONORS AND AWARDS

- Test of Time Award, ACM SIGGRAPH (2023)
- Muybridge Award, International Society of Biomechanics (2021)
- Goel Award, Translational Excellence (2019)
- Member, National Academy of Engineering (2016)
- Fellow, American Society of Biomechanics (2012)
- Giovanni Borelli Award, American Society of Biomechanics (2011)
- James H. Clark Professor, Stanford University (2009-)
- Van C. Mow Medal, Am Soc. Mech. Eng (2008)
- Charles Lee Powell Professor, Stanford University (2006-2009)
- Distinguished Alumnus Award, Colorado State University (2005)
- Maurice E Muller Award, Excellence in Computer Assisted Surgery (2004)
- Fellow, American Institute of Biological and Medical Engineers (2003)
- Powell Faculty Scholar, Stanford University (2000)
- Technology Reinvestment Award, President of the United States (1993)
- National Young Investigator Award, National Science Foundation (1992-1998)
- Baxter Faculty Fellow, Baxter Foundation (1991)

PROFESSIONAL EDUCATION

- Ph.D., Stanford University , Mechanical Engineering (1990)
- M.S., Stanford University , Mechanical Engineering (1986)
- B.S., Colorado State University , Mechanical Engineering (1983)

LINKS

- Neuromuscular Biomechanics Lab: https://nmbl.stanford.edu/
- Google Scholar Profile: https://scholar.google.com/citations?hl=en&user=OEivUAQAAAAJ
- Wu Tsai Human Performance Alliance Stanford University: https://humanperformance.stanford.edu/
- Mobilize Center: https://mobilize.stanford.edu/
- Restore Center: https://restore.stanford.edu/
- SimTK: https://simtk.org/
- Wu Tsai Human Performance Alliance: https://humanperformancealliance.org/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Experimental and computational approaches to study human movement. Development of biomechanical models to analyze muscle function, study movement abnormalities, design medical products, and guide surgery. Imaging and health technology development. Discovering the principles of peak performance to advance human health. Human performance research. Wearable technologies, video motion capture, and machine learning to enable large-scale analysis.

CLINICAL TRIALS

- Digital Knee Osteoarthritis Mindset Intervention, Not Recruiting

Teaching

COURSES

2026-27

- Biomechanics of Movement: ME 281 (Win)
- Design Thinking in Human Performance Research: BIOE 190 (Spr)
- Modeling and Simulation of Human Movement: ME 485 (Spr)

2025-26

- Biomechanics of Movement: BIOE 281, ME 281 (Win)
- Design Thinking in Human Performance Research: BIOE 190 (Spr)

2024-25

- Biomechanics of Movement: BIOE 281, ME 281 (Win)
- Design Thinking in Human Performance Research: BIOE 190 (Spr)

2023-24

- Biomechanics of Movement: BIOE 281, ME 281 (Win)
- Design Thinking in Human Performance Research: BIOE 190 (Spr)
- Form and Function: Anatomy and Biomechanics of Italian Renaissance Art: OSPFLOR 36 (Spr)

STANFORD ADVISEES

Ariana Rodrigues

Doctoral Dissertation Reader (AC)

Mary Kate Gale, Michael Hittle, Kenji Marshall, Jeremy McCulloch, Akshita Rao, Sophia Shen, Jessica Towns, Keenon Werling

Postdoctoral Faculty Sponsor

Gauri Desai, Mario Garcia, Dawit Lee, Benjamin McInroe, Melanie Segado, Jack Williams, Liang Xu

Doctoral Dissertation Advisor (AC)

Sydney Covitz, Hannah Heigold, Michelle Joyce, Janelle Kaneda, Six Skov, Kristen Steudel

Doctoral Dissertation Co-Advisor (AC)

Parnian Azizian, Madison George, Mohammadmahdi Honarmand, Katie Marusich, Shardul Sapkota, Tiange Xiang

Master's Program Advisor

David Kutz

Doctoral (Program)

Divya Adil, Sophie Clarke, Hannah Field, Kb Ko, Brianna Leung, Cassidy Little, Sophia Shen, Sascha Stocker, Jessica Towns

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Bioengineering (PhD Program)
- Biomedical Data Science (PhD Program)

- Neurosciences (PhD Program)

Publications

PUBLICATIONS

- **Changes in Hormone Cycles and Exercise Capacity During Testosterone Therapy in a Transmasculine Triathlete: A Case Study.** *Exercise, sport & movement*
  St Pierre, S. R., Johnson, S. C., Muccini, J., Bourne, B., Laniakea, B. H., Delp, S. L., Hicks, J. L.
  2027; 5 (1): e00073

- **BMI and Varus Malalignment Compound to Define a High-Risk Phenotype for Compartment-Specific Knee Osteoarthritis Progression.** *Osteoarthritis and cartilage*
  White, M. S., Kogan, F., Delp, S. L., Chu, C. R., Sherman, S. L., Pai S, A., Gold, G. E., Chaudhari, A. S., Gatti, A. A.
  2026

- **Neural shape models enable cohort-scale simulation of knee cartilage mechanics.** *medRxiv : the preprint server for health sciences*
  Gatti, A. A., Marusich, K. R., Clouthier, A., White, M. S., Ong, C., Esrafilian, A., Smith, C., Kolesar, J., Tan, T., Uhlrich, S., Chu, C., Sherman, S., Gold, et al
  2026

- **Deep learning models detect neuromuscular disease and quantify functional impairment from video-derived biomechanics data.** *bioRxiv : the preprint server for biology*
  Covitz, S. C., Ruth, P. S., Vogt-Domke, S., Ong, C., Tan, T., Chun, A., Ismail, S., Karman, L., Muccini, J., Li, S., Rogers, M., Uhlrich, S., Day, et al
  2026

- **StaBLE: digital metrics capture balance performance across a wide spectrum of balance tasks and abilities.** *bioRxiv : the preprint server for biology*
  Heigold, H., Ruth, P. S., Muccini, J., Lee, D., Barta, S., Rodrigues, A., Hastie, T., Steenerson, K. K., Delp, S. L.
  2026

- **Discovering the mechanics of ultra-low density elastomeric foams in elite-level racing shoes.** *Engineering with computers*
  McCulloch, J. A., Delp, S. L., Kuhl, E.
  2026; 42 (5): 175

- **Sex-Specific Adolescent Development of the Trochlea and Distal Femoral Physis: A 3D Shape Modeling Study.** *Orthopaedic journal of sports medicine*
  Khoo, B., Sinopoli, M. L., Wright, C. E., Alayleh, A., Anaya Gallegos, A., Sherman, S. L., Delp, S., Chaudhari, A., Shea, K. G., Gatti, A. A.
  2026; 14 (9): 23259671261463132

- **Toward measurement of muscle forces during movement.** *Science robotics*
  Tan, T., White, M. S., Delp, S. L.
  2026; 11 (116): eaej8562

- **Patterns of Muscle Health in Single- and Multi-Site Chronic Pain: A UK Biobank Normative Modeling Study.** *medRxiv : the preprint server for health sciences*
  Kaptan, M., Wang, Y., de Boer, A., Goyal, A., Holmes, S., Ozkan, K., Bédard, S., Indriolo, T., Law, C. S., Pfyffer, D., Fundaun, J., Berhe, E., Gold, et al
  2026

- **The menstrual cycle through the lens of a wearable device: insights into physiology, sleep, and cycle variability.** *NPJ digital medicine*
  Gonzalez, A., O'Day, J. J., Johnson, S. C., Kim, J., Jasinski, S. R., Holmes, K. E., Delp, S. L., Hicks, J. L.
  2026

- **Decoding menstrual health across the lifespan: a scoping review of digital health tools in research.** *npj women's health*
  Johnson, S. C., O'Day, J., Kraus, E., Delp, S. L., Hicks, J. L.
  2026; 4 (1): 27

- **Quantifying Anterior Cruciate Ligament Injury Resilience: A Screening and Composite Score Framework.** *Orthopaedic journal of sports medicine*
  Seagers, K., Swaminathan, K., Kolesar, J., Hamner, S., Muccini, J., Hicks, J., Myer, G., Hastie, T., Delp, S.

2026; 14 (5): 23259671261433009

- **BMI and Varus Malalignment Compound to Define a High-Risk Phenotype for Compartment-Specific Knee Osteoarthritis Progression.** *medRxiv : the preprint server for health sciences*
  White, M. S., Kogan, F., Delp, S. L., Chu, C. R., Sherman, S. L., S, A. P., Gold, G. E., Chaudhari, A. S., Gatti, A. A.
  2026
- **Simulation-guided design of exotendons to reduce the energetic cost of running.** *bioRxiv : the preprint server for biology*
  Stingel, J., Bianco, N., Ong, C., Collins, S., Delp, S., Hicks, J.
  2026
- **Estimating Magnetic Field at Joint Centers Reduces Kinematic Errors in Inertial Motion Capture.** *Research square*
  Skov, S., Werling, K., O'Day, J., Hicks, J., Liu, C. K., Delp, S.
  2026
- **Hamstrings muscle dynamics during the Nordic hamstring exercise and high-speed running.** *Journal of biomechanics*
  Haralabidis, N., Steudel, K., Gurchiek, R., Hicks, J., Delp, S.
  2026; 202: 113291
- **VARUS ALIGNMENT AND BMI JOINTLY ACCELERATE MEDIAL FEMORAL CARTILAGE THINNING: DATA FROM THE OSTEOARTHRITIS INITIATIVE**
  White, M. S., Kogan, F., Delp, S. L., Gold, G., Chaudhari, A., Gatti, A.
  ELSEVIER SCI LTD.2026: S67-S68
- **FROM VIDEO CAMERA TO KNEE CARTILAGE TISSUE MECHANICS: OUT OF THE LAB WITH FOUNDATION MODELS**
  Esrafilian, A., Tan, T., Bianco, N., Gatti, A., Chaudhari, A., Hicks, J., Delp, S. L.
  ELSEVIER SCI LTD.2026: S91
- **Adaptations in biceps femoris long-head muscle-tendon mechanics during the Nordic hamstring exercise in response to 9 weeks of training.** *Journal of sport and health science*
  Andrews, M. H., S, A. P., Gurchiek, R. D., Hodges, P. W., Lichtwark, G. A., Delp, S. L., Pincheira, P. A.
  2026: 101134
- **Smartphone video-based knee extension moments during chair rise relate to MRI measures of muscle function.** *medRxiv : the preprint server for health sciences*
  Magruder, R. D., Hall, M., Vainberg, Y., Asay, J. L., Kogan, F., Hicks, J. L., Gold, G. E., Delp, S. L., Uhlrich, S. D., Mazzoli, V.
  2026
- **Knee and hip joint dynamics differ between sprinting and Nordic hamstring exercises.** *Journal of biomechanics*
  Steudel, K., Haralabidis, N., Gurchiek, R., Hicks, J., Delp, S.
  2026; 200: 113236
- **Running with an exotendon reduces compressive knee contact force.** *Journal of biomechanics*
  Stingel, J., Haralabidis, N., Hicks, J., Uhlrich, S., Delp, S.
  2026; 199: 113217
- **Decoding menstrual health across the lifespan: a scoping review of digital health tools in research.** *medRxiv : the preprint server for health sciences*
  Johnson, S. C., O'Day, J., Kraus, E., Delp, S., Hicks, J.
  2026
- **Underlying Tremor Improvement with Consistent Use of Transcutaneous Afferent Patterned Stimulation in Patients with Essential Tremor.** *Tremor and other hyperkinetic movements (New York, N.Y.)*
  Isaacson, S. H., Peckham, E., Tse, W., Petrossian, M. T., Soileau, M. J., Lew, M., Dietiker, C., Luthra, N., Agarwal, P., Dhall, R., Morgan, J., Shamim, E. A., Shill, et al
  2026; 16: 1
- **GaitDynamics: a generative foundation model for analyzing human walking and running.** *Nature biomedical engineering*
  Tan, T., Van Wouwe, T., Werling, K. F., Liu, C. K., Delp, S. L., Hicks, J. L., Chaudhari, A. S.
  2026

- **Smartphone Video-Based Knee Extension Moments During Chair Rise Relate to MRI Measures of Muscle Force-Generating Capacity** *IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING*
  Magruder, R., Hall, M., Vainberg, Y., Asay, J. L., Kogan, F., Hicks, J. L., Gold, G. E., Delp, S. L., Uhlrich, S. D., Mazzoli, V.
  2026; 34: 3824-3831

- **Retraining Gastrocnemius Muscle Coordination Reduces Late-Stance Knee Contact Force in Individuals With Knee Osteoarthritis** *IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING*
  Joyce, M. R., Muccini, J., Randoing, B., Delp, S. L., Uhlrich, S. D.
  2026; 34: 1417-1425

- **Immediate reductions in compressive and shear forces in the knee from gait retraining are associated with slowed cartilage degeneration after 1 year in medial knee osteoarthritis: A retrospective observational cohort study.** *Osteoarthritis and cartilage*
  Seagers, K., Kolesar, J. A., Mazzoli, V., Halilaj, E., Delp, S. L., Uhlrich, S. D.
  2025

- **3D Patellar instability Anatomical Severity Score (3D-PASS): A Novel Machine Learning Score Using 3D Bone Position From MRI to Predict Outcomes of Patellar Instability Treatment (Using a Subset of Data in the JUPITER Cohort).** *Orthopaedic journal of sports medicine*
  Sinopoli, M. L., Gatti, A. A., Wright, C. E., Bartsch, A., Veerkamp, M. W., Boutin, R. D., Mintz, D. N., Emery, K. H., Shea, K. G., Chaudhari, A. S., JUPITER Study Group, Wall, E. J., Elangovan, S., et al
  2025; 13 (12): 23259671251362675

- **AddBiomechanics Dataset: Capturing the Physics of Human Motion at Scale.** *Computer vision - ECCV ... : ... European Conference on Computer Vision : proceedings. European Conference on Computer Vision*
  Werling, K., Kaneda, J., Tan, T., Agarwal, R., Skov, S., Van Wouwe, T., Uhlrich, S., Bianco, N., Ong, C., Falisse, A., Sapkota, S., Chandra, A., Carter, et al
  2025; 15146: 490-508

- **Automated Segmentation of Forearm Muscles: Clinical Associations With Hand Function, Muscle Volume and Intramuscular Fat.** *JCSM communications*
  Fundaun, J., Oliva, V., Bédard, S., Wesselink, E. O., Lynn, B. P., Pai S, A., Pfyffer, D., Kaptan, M., Berhe, N., Ratliff, J., Hu, S. S., Smith, Z. A., Hastie, et al
  2025; 8 (2): e70015

- **Video-based biomechanical analysis captures disease-specific movement signatures of myotonic dystrophy and facioscapulohumeral muscular dystrophy**
  De Savasse, C., Ruth, P., Ulrich, S., Vogt-Domke, S., Ismail, S., Karman, L., Falisse, A., Muccini, J., Covitz, S., Day, J., Delp, S., Duong, T.
  PERGAMON-ELSEVIER SCIENCE LTD.2025

- **Repurposing 2D Diffusion Models with Gaussian Atlas for 3D Generation.** *... IEEE International Conference on Computer Vision workshops. IEEE International Conference on Computer Vision*
  Xiang, T., Li, K., Long, C., Hane, C., Guo, P., Delp, S., Adeli, E., Fei-Fei, L.
  2025; 2025: 16492-16502

- **How peak knee loads are affected by changing the mass of lower-limb body segments during walking.** *PLoS computational biology*
  Miller, D. E., Brown, A. E., Bianco, N. A., Bhise, R., Delp, S. L., Collins, S. H.
  2025; 21 (9): e1012833

- **Video-Based Biomechanical Analysis Captures Disease-Specific Movement Signatures of Different Neuromuscular Diseases.** *NEJM AI*
  Ruth, P. S., Uhlrich, S. D., de Monts, C., Falisse, A., Muccini, J., Covitz, S., Vogt-Domke, S., Day, J., Duong, T., Delp, S. L.
  2025; 2 (9)

- **Improved Strength Prediction Combining MRI Biomarkers of Muscle Quantity and Quality.** *NMR in biomedicine*
  Mazzoli, V., Vainberg, Y., Hall, M. E., Barbieri, M., Asay, J., Muccini, J., Rosenberg, J., Kogan, F., Delp, S., Gold, G. E.
  2025; 38 (9): e70112

- **Countrywide natural experiment links built environment to physical activity.** *Nature*
  Althoff, T., Ivanovic, B., King, A. C., Hicks, J. L., Delp, S. L., Leskovec, J.
  2025

- **Personalised gait retraining for medial compartment knee osteoarthritis: a randomised controlled trial.** *The Lancet. Rheumatology*
  Uhlrich, S. D., Mazzoli, V., Silder, A., Finlay, A. K., Kogan, F., Gold, G. E., Delp, S. L., Beaupre, G. S., Kolesar, J. A.

2025

- **Video-based biomechanical analysis captures disease-specific movement signatures of different neuromuscular diseases.** *bioRxiv : the preprint server for biology*
  Ruth, P. S., Uhlrich, S. D., de Monts, C., Falisse, A., Muccini, J., Covitz, S., Vogt-Domke, S., Day, J., Duong, T., Delp, S. L.
  2025
- **Simulations Reveal how Touchdown Kinematic Variables affect Top Sprinting Speed: Implications for Coaching.** *Medicine and science in sports and exercise*
  Haralabidis, N., Eaton, A. J., Delp, S. L., Hicks, J. L.
  2025
- **Hamstring muscle architecture and microstructure changes following Nordic hamstring exercise training and detraining.** *Journal of sport and health science*
  S, A. P., Andrews, M. H., Gurchiek, R. D., Pincheira, P. A., Barbieri, M., Friedrich, T., Kogan, F., Gold, G. E., Mazzoli, V., Lichtwark, G. A., Delp, S. L., Chaudhari, A. S.
  2025: 101070
- **Detecting artificially impaired balance in human locomotion: metrics, perturbation effects and detection thresholds.** *The Journal of experimental biology*
  Wu, J., Raitor, M., Tan, G. R., Staudenmayer, K. L., Delp, S. L., Liu, C. K., Collins, S. H.
  2025; 228 (10)
- **PATIENT-SPECIFIC CARTILAGE PRESSURES ARE RELATED TO OSTEOARTHRITIS PROGRESSION AND DISEASE SEVERITY**
  Gatti, A. A., Marusich, K. R., Ong, C., Chu, C. R., Esrafilian, A., Delp, S., Gold, G. E., Kogan, F., Chaudhari, A.
  ELSEVIER SCI LTD.2025
- **GaitDynamics: A Generative Foundation Model for Analyzing Human Walking and Running.** *Research square*
  Tan, T., Van Wouwe, T., Werling, K. F., Liu, C. K., Delp, S. L., Hicks, J. L., Chaudhari, A. S.
  2025
- **Leg Muscle Volume, Intramuscular Fat and Force Generation: Insights From a Computer-Vision Model and Fat-Water MRI.** *Journal of cachexia, sarcopenia and muscle*
  Smith, A. C., Laguna, J. M., Wesselink, E. O., Scott, Z. E., Jenkins, H., Thornton, W. A., Wasielewski, M., Connor, J., Delp, S., Chaudhari, A. S., Parrish, T. B., Mackey, S., Elliott, et al
  2025; 16 (1): e13735
- **Marker Data Enhancement for Markerless Motion Capture.** *IEEE transactions on bio-medical engineering*
  Falisse, A., Uhlrich, S. D., Chaudhari, A. S., Hicks, J. L., Delp, S. L.
  2025; PP
- **AddBiomechanics Dataset: Capturing the Physics of Human Motion at Scale**
  Werling, K., Kaneda, J., Tan, T., Agarwal, R., Skov, S., Van Wouwe, T., Uhlrich, S., Bianco, N., Ong, C., Falisse, A., Sapkota, S., Chandra, A., Carter, et al
  edited by Leonardis, A., Ricci, E., Roth, S., Russakovsky, O., Sattler, T., Varol, G.
  SPRINGER INTERNATIONAL PUBLISHING AG.2025: 490-508
- **NeuHMR: Neural Rendering-Guided Human Motion Reconstruction**
  Xiang, T., Wang, K., Heo, J., Adeli, E., Yeung, S., Delp, S., Li Fei-Fei, IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2025: 1518-1528
- **OpenCapBench: A Benchmark to Bridge Pose Estimation and Biomechanics**
  Gozlan, Y., Falisse, A., Uhlrich, S., Gatti, A., Black, M., Hicks, J., Delp, S., Chaudhari, A., IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2025: 4056-4065
- **A Data-Driven Approach to Estimate Changes in Peak Knee Contact Force With Exoskeleton Assistance.** *IEEE transactions on neural systems and rehabilitation engineering : a publication of the IEEE Engineering in Medicine and Biology Society*
  Miller, D. E., Brown, A. E., Bianco, N. A., Delp, S. L., Collins, S. H.
  2025; 33: 3116-3128
- **ShapeMed-Knee: A Dataset and Neural Shape Model Benchmark for Modeling 3D Femurs.** *IEEE transactions on medical imaging*

Gatti, A. A., Blankemeier, L., Veen, D. V., Hargreaves, B., Delp, S. L., Gold, G. E., Kogan, F., Chaudhari, A. S.
2024; PP

- **Hamstrings are Stretched More and Faster during Accelerative Running Compared to Speed-Matched Constant-Speed Running.** *Medicine and science in sports and exercise*
  Gurchiek, R. D., Teplin, Z., Falisse, A., Hicks, J. L., Delp, S. L.
  2024
- **A randomized clinical trial testing digital mindset intervention for knee osteoarthritis pain and activity improvement.** *NPJ digital medicine*
  Boswell, M. A., Evans, K. M., Ghandwani, D., Hastie, T., Zion, S. R., Moya, P. L., Giori, N. J., Hicks, J. L., Crum, A. J., Delp, S. L.
  2024; 7 (1): 285
- **Multiscale hamstring muscle adaptations following 9 weeks of eccentric training.** *Journal of sport and health science*
  Andrews, M. H., S, A. P., Gurchiek, R. D., Pincheira, P. A., Chaudhari, A. S., Hodges, P. W., Lichtwark, G. A., Delp, S. L.
  2024: 100996
- **Personalizing the shoulder rhythm in a computational upper body model improves kinematic tracking in high range-of-motion arm movements.** *Journal of biomechanics*
  Maier, J. N., Bianco, N. A., Ong, C. F., Muccini, J., Kuhl, E., Delp, S. L.
  2024; 176: 112365
- **Impact Of Time Of Day On Neuromuscular Performance Of The Star Excursion Balance Test In Young Women**
  Weed, L., Thompson, S., Kraus, E., Delp, S., Zeitzer, J.
  LIPPINCOTT WILLIAMS & WILKINS.2024: 257-258
- **Quantification Of 3D Knee Morphology In Patients With Patellar Instability**
  Lee, M. R., Gatti, A. A., Wright, C. E., Bartsch, A., Veerkamp, M. W., Parikh, S. N., Chaudhari, A. S., Shea, K. G., Sherman, S. L., Delp, S. L.
  LIPPINCOTT WILLIAMS & WILKINS.2024: 61-62
- **Marker Data Enhancement For Markerless Motion Capture.** *bioRxiv : the preprint server for biology*
  Falisse, A., Uhlrich, S. D., Chaudhari, A. S., Hicks, J. L., Delp, S. L.
  2024
- **ISB recommendations on the definition, estimation, and reporting of joint kinematics in human motion analysis applications using wearable inertial measurement technology.** *Journal of biomechanics*
  Cereatti, A., Gurchiek, R., Mündermann, A., Fantozzi, S., Horak, F., Delp, S., Aminian, K.
  2024; 173: 112225
- **ShapeMed-Knee: A Dataset and Neural Shape Model Benchmark for Modeling 3D Femurs.** *medRxiv : the preprint server for health sciences*
  Gatti, A. A., Blankemeier, L., Van Veen, D., Hargreaves, B., Delp, S. L., Gold, G. E., Kogan, F., Chaudhari, A. S.
  2024
- **A DIGITAL MINDSET INTERVENTION TO IMPROVE PAIN AND EXERCISE PARTICIPATION IN INDIVIDUALS WITH KNEE OSTEOARTHRITIS: A RANDOMIZED CLINICAL TRIAL**
  Boswell, M., Evans, K., Ghnadwani, D., Hastie, T., Zion, S., Moya, P., Giori, N., Crum, A., Delp, S.
  ELSEVIER SCI LTD.2024: S7-S8
- **REDUCED COMPRESSIVE & SHEAR FORCES FROM GAIT RETRAINING RELATE TO SLOWED CARTILAGE DEGENERATION**
  Seagers, K., Kolesar, J. A., Mazzoli, V., Halilaj, E., Delp, S., Uhlrich, S.
  ELSEVIER SCI LTD.2024: S28-S29
- **Hamstrings are stretched more and faster during accelerative running compared to speed-matched constant speed running.** *bioRxiv : the preprint server for biology*
  Gurchiek, R. D., Teplin, Z., Falisse, A., Hicks, J. L., Delp, S. L.
  2024
- **A simulation framework to determine optimal strength training and musculoskeletal geometry for sprinting and distance running.** *PLoS computational biology*
  Van Wouwe, T., Hicks, J., Delp, S., Liu, K. C.
  2024; 20 (2): e1011410

- **Lower-Limb Exoskeletons Appeal to Both Clinicians and Older Adults, Especially for Fall Prevention and Joint Pain Reduction.** *IEEE transactions on neural systems and rehabilitation engineering : a publication of the IEEE Engineering in Medicine and Biology Society*
  Raitor, M., Ruggles, S. W., Delp, S. L., Liu, C. K., Collins, S. H.
  2024; 32: 1577-1585
- **OpenCap: Movement Biomechanics from Smartphone Videos**
  Falisse, A., Uhlrich, S. D., Hicks, J. L., Delp, S. L.
  edited by Pons, J. L., Tornero, J., Akay, M.
  SPRINGER INTERNATIONAL PUBLISHING AG.2024: 519-522
- **Towards Video-Based Movement Biomarkers for Neuromuscular Diseases**
  Uhlrich, S. D., Ruth, P. S., de Monts, C., Falisse, A., Muccini, J., Ataide, P., Day, J., Duong, T., Delp, S. L.
  edited by Pons, J. L., Tornero, J., Akay, M.
  SPRINGER INTERNATIONAL PUBLISHING AG.2024: 501-504
- **OccFusion: Rendering Occluded Humans with Generative Diffusion Priors.** *Advances in neural information processing systems*
  Sun, A., Xiang, T., Delp, S., Fei-Fei, L., Adeli, E.
  2024; 37: 92184-92209
- **OccFusion: Rendering Occluded Humans with Generative Diffusion Priors.** *Advances in neural information processing systems*
  Sun, A., Xiang, T., Delp, S., Fei-Fei, L., Adeli, E.
  2024; 37: 92184-92209
- **DiffusionPoser: Real-time Human Motion Reconstruction From Arbitrary Sparse Sensors Using Autoregressive Diffusion**
  Van Wouwe, T., Lee, S., Falisse, A., Delp, S., Liu, C., IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2024: 2513-2523
- **Muscle-driven simulations and experimental data of cycling.** *Scientific reports*
  Clancy, C. E., Gatti, A. A., Ong, C. F., Maly, M. R., Delp, S. L.
  2023; 13 (1): 21534
- **From Skin to Skeleton: Towards Biomechanically Accurate 3D Digital Humans** *ACM TRANSACTIONS ON GRAPHICS*
  Keller, M., Werling, K., Shin, S., Delp, S., Pujades, S., Liu, C., Black, M. J.
  2023; 42 (6)
- **AddBiomechanics: Automating model scaling, inverse kinematics, and inverse dynamics from human motion data through sequential optimization.** *PloS one*
  Werling, K., Bianco, N. A., Raitor, M., Stingel, J., Hicks, J. L., Collins, S. H., Delp, S. L., Liu, C. K.
  2023; 18 (11): e0295152
- **Simulating Muscle-Level Energetic Cost Savings When Humans Run with a Passive Assistive Device.** *IEEE robotics and automation letters*
  Stingel, J. P., Hicks, J. L., Uhlrich, S. D., Delp, S. L.
  2023; 8 (10): 6267-6274
- **OpenCap: Human movement dynamics from smartphone videos.** *PLoS computational biology*
  Uhlrich, S. D., Falisse, A., Kidziński, Ł., Muccini, J., Ko, M., Chaudhari, A. S., Hicks, J. L., Delp, S. L.
  2023; 19 (10): e1011462
- **The History and Future of Neuromusculoskeletal Biomechanics.** *Journal of applied biomechanics*
  Lloyd, D. G., Jonkers, I., Delp, S. L., Modenese, L.
  2023: 1-11
- **AddBiomechanics: Automating model scaling, inverse kinematics, and inverse dynamics from human motion data through sequential optimization.** *bioRxiv : the preprint server for biology*
  Werling, K., Bianco, N. A., Raitor, M., Stingel, J., Hicks, J. L., Collins, S. H., Delp, S. L., Liu, C. K.
  2023
- **Simulating the effect of ankle plantarflexion and inversion-eversion exoskeleton torques on center of mass kinematics during walking.** *PLoS computational biology*
  Bianco, N. A., Collins, S. H., Liu, K., Delp, S. L.

2023; 19 (8): e1010712

- **Ten steps to becoming a musculoskeletal simulation expert: A half-century of progress and outlook for the future.** *Journal of biomechanics*
  Uhlrich, S. D., Uchida, T. K., Lee, M. R., Delp, S. L.
  2023; 154: 111623
- **How Connecting the Legs with a Spring Improves Human Running Economy.** *bioRxiv : the preprint server for biology*
  Stingel, J. P., Hicks, J. L., Uhlrich, S. D., Delp, S. L.
  2023
- **Can static optimization detect changes in peak medial knee contact forces induced by gait modifications?** *Journal of biomechanics*
  Kaneda, J. M., Seagers, K. A., Uhlrich, S. D., Kolesar, J. A., Thomas, K. A., Delp, S. L.
  2023; 152: 111569
- **A scoping review of portable sensing for out-of-lab anterior cruciate ligament injury prevention and rehabilitation.** *NPJ digital medicine*
  Tan, T., Gatti, A. A., Fan, B., Shea, K. G., Sherman, S. L., Uhlrich, S. D., Hicks, J. L., Delp, S. L., Shull, P. B., Chaudhari, A. S.
  2023; 6 (1): 46
- **Smartphone videos of the sit-to-stand test predict osteoarthritis and health outcomes in a nationwide study.** *NPJ digital medicine*
  Boswell, M. A., Kidziński, Ł., Hicks, J. L., Uhlrich, S. D., Falisse, A., Delp, S. L.
  2023; 6 (1): 32
- **PREDICTING CHRONIC KNEE PAIN USING AN AUTOMATED MRIBASED BONE AND CARTILAGE STATISTICAL SHAPE MODEL: DATA FROM THE OSTEOARTHRITIS INITIATIVE**
  Gatti, A. A., Kogan, F., Delp, S. L., Gold, G. E., Chaudhari, A. S.
  ELSEVIER SCI LTD.2023: S78-S79
- **Effects of Wearable Fitness Trackers and Activity Adequacy Mindsets on Affect, Behavior, and Health: Longitudinal Randomized Controlled Trial.** *Journal of medical Internet research*
  Zahrt, O. H., Evans, K., Murnane, E., Santoro, E., Baiocchi, M., Landay, J., Delp, S., Crum, A.
  2023; 25: e40529
- **Digital medicine Digitising tremor** *LANCET*
  Delp, S. L., Topol, E. J.
  2023; 401 (10372): 187
- **Digitising tremor.** *Lancet (London, England)*
  Delp, S. L., Topol, E. J.
  2023; 401 (10372): 187
- **Leveraging Mobile Technology for Public Health Promotion: A Multidisciplinary Perspective.** *Annual review of public health*
  Hicks, J. L., Boswell, M. A., Althoff, T., Crum, A. J., Ku, J. P., Landay, J. A., Moya, P. M., Murnane, E. L., Snyder, M. P., King, A. C., Delp, S. L.
  2022
- **Confounds in neuroimaging: A clear case of sex as a confound in brain-based prediction.** *Frontiers in neurology*
  Weber, K. A., Teplin, Z. M., Wager, T. D., Law, C. S., Prabhakar, N. K., Ashar, Y. K., Gilam, G., Banerjee, S., Delp, S. L., Glover, G. H., Hastie, T. J., Mackey, S.
  2022; 13: 960760
- **Independently ambulatory children with spina bifida experience near-typical knee and ankle joint moments and forces during walking.** *Gait & posture*
  Lee, M. R., Hicks, J. L., Wren, T. A., Delp, S. L.
  2022; 99: 1-8
- **Personalizing exoskeleton assistance while walking in the real world.** *Nature*
  Slade, P., Kochenderfer, M. J., Delp, S. L., Collins, S. H.
  2022; 610 (7931): 277-282
- **Personalization improves the biomechanical efficacy of foot progression angle modifications in individuals with medial knee osteoarthritis.** *Journal of biomechanics*
  Uhlrich, S. D., Kolesar, J. A., Kidzinski, L., Boswell, M. A., Silder, A., Gold, G. E., Delp, S. L., Beaupre, G. S.

2022; 144: 111312

- **Botulinum neurotoxin type A improves vasti muscle balance, patellar tracking, and pain in patients with chronic patellofemoral pain.** *Journal of orthopaedic research : official publication of the Orthopaedic Research Society*
  Pal, S., Choi, J., Delp, S. L., Fredericson, M.
  2022
- **Muscle coordination retraining inspired by musculoskeletal simulations reduces knee contact force.** *Scientific reports*
  Uhlrich, S. D., Jackson, R. W., Seth, A., Kolesar, J. A., Delp, S. L.
  2022; 12 (1): 9842
- **Changes in foot progression angle during gait reduce the knee adduction moment and do not increase hip moments in individuals with knee osteoarthritis.** *Journal of biomechanics*
  Seagers, K., Uhlrich, S. D., Kolesar, J. A., Berkson, M., Kaneda, J. M., Beaupre, G. S., Delp, S. L.
  2022; 141: 111204
- **Medical and Biomechanical Risk Factors for Incident Bone Stress Injury in Collegiate Runners: Can Plantar Pressure Predict Injury?** *Orthopaedic journal of sports medicine*
  Wilzman, A. R., Tenforde, A. S., Troy, K. L., Hunt, K., Fogel, N., Roche, M. D., Kraus, E., Trikha, R., Delp, S., Fredericson, M.
  2022; 10 (6): 23259671221104793
- **Mindset is associated with future physical activity and management strategies in individuals with knee osteoarthritis.** *Annals of physical and rehabilitation medicine*
  Boswell, M. A., Evans, K. M., Zion, S. R., Boles, D. Z., Hicks, J. L., Delp, S. L., Crum, A. J.
  2022; 65 (6): 101634
- **Running in the wild: Energetics explain ecological running speeds.** *Current biology : CB*
  Selinger, J. C., Hicks, J. L., Jackson, R. W., Wall-Scheffler, C. M., Chang, D., Delp, S. L.
  2022
- **OpenSense: An open-source toolbox for inertial-measurement-unit-based measurement of lower extremity kinematics over long durations.** *Journal of neuroengineering and rehabilitation*
  Al Borno, M., O'Day, J., Ibarra, V., Dunne, J., Seth, A., Habib, A., Ong, C., Hicks, J., Uhlrich, S., Delp, S.
  2022; 19 (1): 22
- **Non-invasive electrical stimulation of peripheral nerves for the management of tremor.** *Journal of the neurological sciences*
  Pascual-Valdunciel, A., Rajagopal, A., Pons, J. L., Delp, S.
  2022; 435: 120195
- **Assessing inertial measurement unit locations for freezing of gait detection and patient preference.** *Journal of neuroengineering and rehabilitation*
  O'Day, J., Lee, M., Seagers, K., Hoffman, S., Jih-Schiff, A., Kidzinski, L., Delp, S., Bronte-Stewart, H.
  2022; 19 (1): 20
- **Coupled exoskeleton assistance simplifies control and maintains metabolic benefits: A simulation study.** *PloS one*
  Bianco, N. A., Franks, P. W., Hicks, J. L., Delp, S. L.
  1800; 17 (1): e0261318
- **Biceps femoris long head sarcomere and fascicle length adaptations after three weeks of eccentric exercise training.** *Journal of sport and health science*
  Pincheira, P. A., Boswell, M. A., Franchi, M. V., Delp, S. L., Lichtwark, G. A.
  2021
- **Open Source Software for Automatic Subregional Assessment of Knee Cartilage Degradation Using Quantitative T2 Relaxometry and Deep Learning.** *Cartilage*
  Thomas, K. A., Krzeminski, D., Kidzinski, L., Paul, R., Rubin, E. B., Halilaj, E., Black, M. S., Chaudhari, A., Gold, G. E., Delp, S. L.
  2021: 19476035211042406
- **Deep reinforcement learning for modeling human locomotion control in neuromechanical simulation.** *Journal of neuroengineering and rehabilitation*
  Song, S., Kidzinski, L., Peng, X. B., Ong, C., Hicks, J., Levine, S., Atkeson, C. G., Delp, S. L.

2021; 18 (1): 126

- **An open-source and wearable system for measuring 3D human motion in real-time.** *IEEE transactions on bio-medical engineering*
  Slade, P., Habib, A., Hicks, J. L., Delp, S. L.
  2021; PP

- **Wearable sensors enable personalized predictions of clinical laboratory measurements.** *Nature medicine*
  Dunn, J., Kidzinski, L., Runge, R., Witt, D., Hicks, J. L., Schussler-Fiorenza Rose, S. M., Li, X., Bahmani, A., Delp, S. L., Hastie, T., Snyder, M. P.
  2021

- **IDENTIFYING CONCERNS OF YOUNG ADULTS WITH OSTEOARTHRITIS ON REDDIT**
  Song, A. J., Boswell, M. A., Hicks, J. L., Delp, S. L.
  ELSEVIER SCI LTD.2021: S227-S229

- **MINDSETS PREDICT PHYSICAL ACTIVITY AND MANAGEMENT STRATEGIES IN INDIVIDUALS WITH KNEE OSTEOARTHRITIS**
  Boswell, M. A., Hicks, J. L., Evans, K. M., Zion, S. R., Boles, D. Z., Delp, S. L., Crum, A. J.
  ELSEVIER SCI LTD.2021: S222-S224

- **OPEN SOURCE AND AUTOMATIC SUBREGIONAL ASSESSMENT OF KNEE CARTILAGE DEGRADATION USING QUANTITATIVE T2 RELAXOMETRY AND DEEP LEARNING**
  Thomas, K. A., Krzeminski, D., Kidzinski, L., Paul, R., Rubin, E. B., Halilaj, E., Black, M. S., Chaudhari, A., Gold, G. E., Delp, S. L.
  ELSEVIER SCI LTD.2021: S43-S44

- **Assessment of Extractability and Accuracy of Electronic Health Record Data for Joint Implant Registries.** *JAMA network open*
  Giori, N. J., Radin, J., Callahan, A., Fries, J. A., Halilaj, E., Re, C., Delp, S. L., Shah, N. H., Harris, A. H.
  2021; 4 (3): e211728

- **A neural network to predict the knee adduction moment in patients with osteoarthritis using anatomical landmarks obtainable from 2D video analysis.** *Osteoarthritis and cartilage*
  Boswell, M. A., Uhlrich, S. D., Kidzinski, L., Thomas, K., Kolesar, J. A., Gold, G. E., Beaupre, G. S., Delp, S. L.
  2021

- **Sensing leg movement enhances wearable monitoring of energy expenditure.** *Nature communications*
  Slade, P., Kochenderfer, M. J., Delp, S. L., Collins, S. H.
  2021; 12 (1): 4312

- **A marker registration method to improve joint angles computed by constrained inverse kinematics.** *PloS one*
  Dunne, J. J., Uchida, T. K., Besier, T. F., Delp, S. L., Seth, A.
  2021; 16 (5): e0252425

- **Transcutaneous Afferent Patterned Stimulation Therapy Reduces Hand Tremor for One Hour in Essential Tremor Patients** *FRONTIERS IN NEUROSCIENCE*
  Yu, J. Y., Rajagopal, A., Syrkin-Nikolau, J., Shin, S., Rosenbluth, K. H., Khosla, D., Ross, E. K., Delp, S. L.
  2020; 14: 530300

- **Brain Strength: Multi-Modal Brain MRI Predicts Grip Strength**
  Weber, K. A., Wager, T. D., Upadhyayula, P. A., Law, C. S., Ashar, Y. K., Prabhakar, N. K., Zhu, S., Gilam, G., Banerjee, S., Delp, S. L., Glover, G. H., Hastie, T. J., Mackey, et al
  WILEY.2020: S223–S224

- **Prospective Home-use Study on Non-invasive Neuromodulation Therapy for Essential Tremor** *TREMOR AND OTHER HYPERKINETIC MOVEMENTS*
  Isaacson, S. H., Peckham, E., Tse, W., Waln, O., Way, C., Petrossian, M. T., Dahodwala, N., Soileau, M. J., Lew, M., Dietiker, C., Luthra, N., Agarwal, P., Dhall, et al
  2020; 10

- **Prospective Home-use Study on Non-invasive Neuromodulation Therapy for Essential Tremor.** *Tremor and other hyperkinetic movements (New York, N.Y.)*
  Isaacson, S. H., Peckham, E., Tse, W., Waln, O., Way, C., Petrossian, M. T., Dahodwala, N., Soileau, M. J., Lew, M., Dietiker, C., Luthra, N., Agarwal, P., Dhall, et al
  2020; 10: 29

- **The effects of motor modularity on performance, learning and generalizability in upper-extremity reaching: a computational analysis.** *Journal of the Royal Society, Interface*
  Al Borno, M., Hicks, J. L., Delp, S. L.
  2020; 17 (167): 20200011
- **Automated Classification of Radiographic Knee Osteoarthritis Severity Using Deep Neural Networks.** *Radiology. Artificial intelligence*
  Thomas, K. A., Kidzinski, L., Halilaj, E., Fleming, S. L., Venkataraman, G. R., Oei, E. H., Gold, G. E., Delp, S. L.
  2020; 2 (2): e190065
- **Optogenetic chronic neuromodulation of the diabetic cystopathy mouse model - histology and bladder tissue analysis**
  Wallace, S., Tran, D., Briggs, M., Wen, Y., Montgomery, K., Zhuang, G., Dibberfuhl, A., Delp, S., Chen, B.
  WILEY.2020: S48–S49
- **Optogenetic chronic neuromodulation of the diabetic cystopathy mouse model - functional effect**
  Wallace, S., Briggs, M., Wen, Y., Tran, D., Montgomery, K., Zhuang, G., Dobberfuhl, A., Delp, S., Chen, B.
  WILEY.2020: S47–S48
- **Optogenetic chronic neuromodulation of the diabetic cystopathy mouse model - study design**
  Wallace, S., Wan, Y., Briggs, M., Tran, D., Montgomery, K., Zhuang, G., Dobberfuhl, A., Delp, S., Chen, B.
  WILEY.2020: S44–S45
- **Microendoscopy detects altered muscular contractile dynamics in a mouse model of amyotrophic lateral sclerosis.** *Scientific reports*
  Chen, X., Sanchez, G. N., Schnitzer, M. J., Delp, S. L.
  2020; 10 (1): 457
- **High-fidelity musculoskeletal modeling reveals a motor planning contribution to the speed-accuracy tradeoff.** *eLife*
  Al Borno, M. n., Vyas, S. n., Shenoy, K. V., Delp, S. L.
  2020; 9
- **Testing Simulated Assistance Strategies on a Hip-Knee-Ankle Exoskeleton: a Case Study**
  Franks, P. W., Bianco, N. A., Bryan, G. M., Hicks, J. L., Delp, S. L., Collins, S. H., IEEE
  IEEE.2020: 700-707
- **Rapid volumetric gagCEST imaging of knee articular cartilage at 3 T: evaluation of improved dynamic range and an osteoarthritic population.** *NMR in biomedicine*
  Watkins, L. E., Rubin, E. B., Mazzoli, V. n., Uhlrich, S. D., Desai, A. D., Black, M. n., Ho, G. K., Delp, S. L., Levenston, M. E., Beaupré, G. S., Gold, G. E., Kogan, F. n.
  2020: e4310
- **The turning and barrier course reveals gait parameters for detecting freezing of gait and measuring the efficacy of deep brain stimulation.** *PloS one*
  O'Day, J. n., Syrkin-Nikolau, J. n., Anidi, C. n., Kidzinski, L. n., Delp, S. n., Bronte-Stewart, H. n.
  2020; 15 (4): e0231984
- **Foot strike pattern during running alters muscle-tendon dynamics of the gastrocnemius and the soleus.** *Scientific reports*
  Yong, J. R., Dembia, C. L., Silder, A. n., Jackson, R. W., Fredericson, M. n., Delp, S. L.
  2020; 10 (1): 5872
- **Pre-operative gastrocnemius lengths in gait predict outcomes following gastrocnemius lengthening surgery in children with cerebral palsy.** *PloS one*
  Rajagopal, A., Kidzinski, L., McGlaughlin, A. S., Hicks, J. L., Delp, S. L., Schwartz, M. H.
  2020; 15 (6): e0233706
- **Deep neural networks enable quantitative movement analysis using single-camera videos.** *Nature communications*
  Kidziński, Ł. n., Yang, B. n., Hicks, J. L., Rajagopal, A. n., Delp, S. L., Schwartz, M. H.
  2020; 11 (1): 4054
- **OpenSim Moco: Musculoskeletal optimal control.** *PLoS computational biology*
  Dembia, C. L., Bianco, N. A., Falisse, A. n., Hicks, J. L., Delp, S. L.
  2020; 16 (12): e1008493

- **OPTOGENETIC NEUROMODULATION IN THE DIABETIC CYSTOPATHY MOUSE MODEL**
  Wallace, S. L., Briggs, M. A., Tran, D. T., Wen, Y., Montgomery, K., Zhuang, G., Dobberfuhl, A. D., Delp, S., Chen, B. H.
  SPRINGER LONDON LTD.2019: S272

- **Connecting the legs with a spring improves human running economy.** *The Journal of experimental biology*
  Simpson, C. S., Welker, C. G., Uhlrich, S. D., Sketch, S. M., Jackson, R. W., Delp, S. L., Collins, S. H., Selinger, J. C., Hawkes, E. W.
  2019

- **An Acute Randomized Controlled Trial of Noninvasive Peripheral Nerve Stimulation in Essential Tremor** *NEUROMODULATION*
  Pahwa, R., Dhall, R., Ostrem, J., Gwinn, R., Lyons, K., Ro, S., Dietiker, C., Luthra, N., Chidester, P., Hamner, S., Ross, E., Delp, S.
  2019; 22 (5): 537–45

- **Best practices for analyzing large-scale health data from wearables and smartphone apps.** *NPJ digital medicine*
  Hicks, J. L., Althoff, T., Sosic, R., Kuhar, P., Bostjancic, B., King, A. C., Leskovec, J., Delp, S. L.
  2019; 2: 45

- **Best practices for analyzing large-scale health data from wearables and smartphone apps** *NPJ DIGITAL MEDICINE*
  Hicks, J. L., Althoff, T., Sosic, R., Kuhar, P., Bostjancic, B., King, A. C., Leskovec, J., Delp, S. L.
  2019; 2

- **GAIT RETRAINING AS A CONSERVATIVE TREATMENT FOR MEDIAL KNEE OSTEOARTHRITIS**
  Mazzoli, V., Uhlrich, S., Rubin, E., Kogan, F., Heargraves, B., Delp, S., Beaupre, G. S., Gold, G. E.
  ELSEVIER SCI LTD.2019: S349

- **GAGCEST MRI AT 3T CAN DETECT CARTILAGE DIFFERENCES BETWEEN HEALTHY AND OSTEOARTHRITIC SUBJECTS**
  Rubin, E., Watkins, L., Mazzoli, V., Desai, A. D., Ho, G., Kogan, F., Ulrich, S., Kolesar, J., Delp, S., Beaupre, G., Gold, G. E.
  ELSEVIER SCI LTD.2019: S355–S356

- **SIX WEEKS OF PERSONALIZED GAIT RETRAINING TO OFFLOAD THE MEDIAL COMPARTMENT OF THE KNEE REDUCES PAIN MORE THAN SHAM GAIT RETRAINING**
  Uhlrich, S. D., Kolesar, J. A., Silder, A., Berkson, M. Z., Presten, B., Montague-Alamin, H. A., Edouard, N., Willoughby, D., Finlay, A. K., Gold, G. E., Delp, S. L., Beaupre, G. S.
  ELSEVIER SCI LTD.2019: S28

- **A murine model of chronic sacral neuromodulation using the optogenetic technique**
  Wallace, S. L., Briggs, M. A., Wen, Y., Montgomery, K., Dobberfuhl, A. D., Zhuang, G., Diaz, E. C., Delp, S., Chen, B.
  WILEY.2019: S15

- **An Acute Randomized Controlled Trial of Noninvasive Peripheral Nerve Stimulation in Essential Tremor.** *Neuromodulation : journal of the International Neuromodulation Society*
  Pahwa, R., Dhall, R., Ostrem, J., Gwinn, R., Lyons, K., Ro, S., Dietiker, C., Luthra, N., Chidester, P., Hamner, S., Ross, E., Delp, S.
  2019

- **Patellofemoral cartilage stresses are most sensitive to variations in vastus medialis muscle forces** *COMPUTER METHODS IN BIOMECHANICS AND BIOMEDICAL ENGINEERING*
  Pal, S., Besier, T. F., Gold, G. E., Fredericson, M., Delp, S. L., Beaupre, G. S.
  2019; 22 (2): 206–16

- **Automatic real-time gait event detection in children using deep neural networks.** *PloS one*
  Kidzinski, L., Delp, S., Schwartz, M.
  2019; 14 (1): e0211466

- **Learning one's genetic risk changes physiology independent of actual genetic risk** *Nature Human Behaviour*
  Turnwald, B. P., Goyer, J. P., Boles, D. Z., Silder, A., Delp, S. L., Crum, A. J.
  2019; 3: 48-56

- **Learning one's genetic risk changes physiology independent of actual genetic risk.** *Nature human behaviour*
  Turnwald, B. P., Goyer, J. P., Boles, D. Z., Silder, A., Delp, S. L., Crum, A. J.
  2019; 3 (1): 48-56

- **Predicting gait adaptations due to ankle plantarflexor muscle weakness and contracture using physics-based musculoskeletal simulations.** *PLoS computational biology*
  Ong, C. F., Geijtenbeek, T. n., Hicks, J. L., Delp, S. L.
  2019; 15 (10): e1006993
- **Rapid energy expenditure estimation for ankle assisted and inclined loaded walking.** *Journal of neuroengineering and rehabilitation*
  Slade, P. n., Troutman, R. n., Kochenderfer, M. J., Collins, S. H., Delp, S. L.
  2019; 16 (1): 67
- **Muscle Contributions to Upper-Extremity Movement and Work From a Musculoskeletal Model of the Human Shoulder.** *Frontiers in neurorobotics*
  Seth, A. n., Dong, M. n., Matias, R. n., Delp, S. n.
  2019; 13: 90
- **Weakly supervised classification of rare aortic valve malformations using unlabeled cardiac MRI sequences** *Nature Communications*
  Fries, J. A., Varma, P., Chen, V. S., Xiao, K., Tejeda, H., Saha, P., Dunnmon, J., Chubb, H., Maskatia, S., Fiterau, M., Delp, S., Ashley, E., Ré, et al
  2019; 10
- **Muscle Contributions to Upper-Extremity Movement and Work From a Musculoskeletal Model of the Human Shoulder.** *Frontiers in neurorobotics*
  Seth, A. n., Dong, M. n., Matias, R. n., Delp, S. n.
  2019; 13: 90
- **Weakly supervised classification of rare aortic valve malformations using unlabeled cardiac MRI sequences** *Nature Communications*
  Fries, J. A., Varma, P., Chen, V. S., Xiao, K., Tejeda, H., Saha, P., Dunnmon, J., Chubb, H., Maskatia, S., Fiterau, M., Delp, S., Ashley, E., Ré, et al
  2019; 10
- **Patellofemoral cartilage stresses are most sensitive to variations in vastus medialis muscle forces.** *Computer methods in biomechanics and biomedical engineering*
  Pal, S., Besier, T. F., Gold, G. E., Fredericson, M., Delp, S. L., Beaupre, G. S.
  2018: 1–11
- **Robust Physics-based Motion Retargeting with Realistic Body Shapes** *COMPUTER GRAPHICS FORUM*
  Al Borno, M., Righetti, L., Black, M. J., Delp, S. L., Fiume, E., Romero, J.
  2018; 37 (8): 81–92
- **Microendoscopy reveals positive correlation in multiscale length changes and variable sarcomere lengths across different regions of human muscle** *JOURNAL OF APPLIED PHYSIOLOGY*
  Lichtwark, G. A., Farris, D. J., Chen, X., Hodges, P. W., Delp, S. L.
  2018; 125 (6): 1812–20
- **Machine learning in human movement biomechanics: Best practices, common pitfalls, and new opportunities** *JOURNAL OF BIOMECHANICS*
  Halilaj, E., Rajagopal, A., Fiterau, M., Hicks, J. L., Hastie, T. J., Delp, S. L.
  2018; 81: 1–11
- **Estimating the effect size of surgery to improve walking in children with cerebral palsy from retrospective observational clinical data.** *Scientific reports*
  Rajagopal, A., Kidzinski, L., McGlaughlin, A. S., Hicks, J. L., Delp, S. L., Schwartz, M. H.
  2018; 8 (1): 16344
- **Machine learning in human movement biomechanics: Best practices, common pitfalls, and new opportunities.** *Journal of biomechanics*
  Halilaj, E., Rajagopal, A., Fiterau, M., Hicks, J. L., Hastie, T. J., Delp, S. L.
  2018
- **Modeling and Predicting Osteoarthritis Progression: Data from the Osteoarthritis Initiative.** *Osteoarthritis and cartilage*
  Halilaj, E., Le, Y., Hicks, J. L., Hastie, T. J., Delp, S. L.
  2018
- **OpenSim: Simulating musculoskeletal dynamics and neuromuscular control to study human and animal movement.** *PLoS computational biology*

Seth, A., Hicks, J. L., Uchida, T. K., Habib, A., Dembia, C. L., Dunne, J. J., Ong, C. F., DeMers, M. S., Rajagopal, A., Millard, M., Hamner, S. R., Arnold, E. M., Yong, et al
2018; 14 (7): e1006223

- **Noninvasive Neuromodulation in Essential Tremor Demonstrates Relief in a Sham-Controlled Pilot Trial** *MOVEMENT DISORDERS*
  Lin, P. T., Ross, E. K., Chidester, P., Rosenbluth, K. H., Hamner, S. R., Wong, S. H., Sanger, T. D., Hallett, M., Delp, S. L.
  2018; 33 (7): 1182–83
- **Physical activity is associated with changes in knee cartilage microstructure** *OSTEOARTHRITIS AND CARTILAGE*
  Halilaj, E., Hastie, T. J., Gold, G. E., Delp, S. L.
  2018; 26 (6): 770–74
- **Acute changes in foot strike pattern and cadence affect running parameters associated with tibial stress fractures.** *Journal of biomechanics*
  Yong, J. R., Silder, A., Montgomery, K. L., Fredericson, M., Delp, S. L.
  2018
- **AUTOMATED STAGING OF KNEE OSTEOARTHRITIS SEVERITY USING DEEP NEURAL NETWORKS**
  Suresha, S., Kidzinski, L., Halilaj, E., Gold, G. E., Delp, S. L.
  ELSEVIER SCI LTD.2018: S441
- **Age Influences Biomechanical Changes After Participation in an Anterior Cruciate Ligament Injury Prevention Program** *AMERICAN JOURNAL OF SPORTS MEDICINE*
  Thompson-Kolesar, J. A., Gatewood, C. T., Tran, A. A., Silder, A., Shultz, R., Delpt, S. L., Dragoo, J. L.
  2018; 46 (3): 598–606
- **Perspectives on Sharing Models and Related Resources in Computational Biomechanics Research** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
  Erdemir, A., Hunter, P. J., Holzapfel, G. A., Loew, L. M., Middleton, J., Jacobs, C. R., Nithiarasu, P., Lohner, R., Wei, G., Winkelstein, B. A., Barocas, V. H., Guilak, F., Ku, et al
  2018; 140 (2)
- **Subject-specific toe-in or toe-out gait modifications reduce the larger knee adduction moment peak more than a non-personalized approach** *JOURNAL OF BIOMECHANICS*
  Uhlrich, S. D., Slider, A., Beaupre, G. S., Shull, P. B., Delp, S. L.
  2018; 66: 103–10
- **Large-scale physical activity data reveal worldwide activity inequality** *NATURE*
  Althoff, T., Sosic, R., Hicks, J. L., King, A. C., Delp, S. L., Leskovec, J.
  2017; 547 (7663): 336-+
- **Muscle-tendon mechanics explain unexpected effects of exoskeleton assistance on metabolic rate during walking.** *journal of experimental biology*
  Jackson, R. W., Dembia, C. L., Delp, S. L., Collins, S. H.
  2017; 220: 2082-2095
- **A Brainstem-Spinal Cord Inhibitory Circuit for Mechanical Pain Modulation by GABA and Enkephalins.** *Neuron*
  François, A., Low, S. A., Sypek, E. I., Christensen, A. J., Sotoudeh, C., Beier, K. T., Ramakrishnan, C., Ritola, K. D., Sharif-Naeini, R., Deisseroth, K., Delp, S. L., Malenka, R. C., Luo, et al
  2017; 93 (4): 822-839 e6
- **Preparatory co-activation of the ankle muscles may prevent ankle inversion injuries.** *Journal of biomechanics*
  Demers, M. S., Hicks, J. L., Delp, S. L.
  2017; 52: 17-23
- **Sanativo Wound Healing Product Does Not Accelerate Reepithelialization in a Mouse Cutaneous Wound Healing Model.** *Plastic and reconstructive surgery*
  Marshall, C. D., Hu, M. S., Leavitt, T., Barnes, L. A., Cheung, A. T., Malhotra, S., Lorenz, H. P., Delp, S. L., Quake, S. R., Longaker, M. T.
  2017; 139 (2): 343-352
- **Biomechanical Effects of an Injury Prevention Program in Preadolescent Female Soccer Athletes** *AMERICAN JOURNAL OF SPORTS MEDICINE*

Thompson, J. A., Tran, A. A., Gatewood, C. T., Shultz, R., Silder, A., Delp, S. L., Dragoo, J. L.
2017; 45 (2): 294-301

- **ShortFuse: Biomedical Time Series Representations in the Presence of Structured Information.** *Proceedings of machine learning research*
  Fiterau, M. n., Bhooshan, S. n., Fries, J. n., Bournhonesque, C. n., Hicks, J. n., Halilaj, E. n., Ré, C. n., Delp, S. n.
  2017; 68: 59–74
- **Prostaglandin E2 is essential for efficacious skeletal muscle stem-cell function, augmenting regeneration and strength.** *Proceedings of the National Academy of Sciences of the United States of America*
  Ho, A. T., Palla, A. R., Blake, M. R., Yucel, N. D., Wang, Y. X., Magnusson, K. E., Holbrook, C. A., Kraft, P. E., Delp, S. L., Blau, H. M.
  2017; 114 (26): 6675–84
- **Simulating ideal assistive devices to reduce the metabolic cost of walking with heavy loads.** *PloS one*
  Dembia, C. L., Silder, A. n., Uchida, T. K., Hicks, J. L., Delp, S. L.
  2017; 12 (7): e0180320
- **Human soleus sarcomere lengths measured using in vivo microendoscopy at two ankle flexion angles** *JOURNAL OF BIOMECHANICS*
  Chen, X., Delp, S. L.
  2016; 49 (16): 4164-4167
- **In Vivo Interrogation of Spinal Mechanosensory Circuits.** *Cell reports*
  Christensen, A. J., Iyer, S. M., François, A., Vyas, S., Ramakrishnan, C., Vesuna, S., Deisseroth, K., Scherrer, G., Delp, S. L.
  2016; 17 (6): 1699-1710
- **Biomechanical Effects of an Injury Prevention Program in Preadolescent Female Soccer Athletes.** *American journal of sports medicine*
  Thompson, J. A., Tran, A. A., Gatewood, C. T., Shultz, R., Silder, A., Delp, S. L., Dragoo, J. L.
  2016
- **Gait biomechanics in the era of data science.** *Journal of biomechanics*
  Ferber, R., Osis, S. T., Hicks, J. L., Delp, S. L.
  2016
- **Full-Body Musculoskeletal Model for Muscle-Driven Simulation of Human Gait** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
  Rajagopal, A., Dembia, C. L., Demers, M. S., Delp, D. D., Hicks, J. L., Delp, S. L.
  2016; 63 (10): 2068-2079
- **Simulating Ideal Assistive Devices to Reduce the Metabolic Cost of Running** *PLOS ONE*
  Uchida, T. K., Seth, A., Pouya, S., Dembia, C. L., Hicks, J. L., Delp, S. L.
  2016; 11 (9)
- **Changes in sarcomere lengths of the human vastus lateralis muscle with knee flexion measured using in vivo microendoscopy** *JOURNAL OF BIOMECHANICS*
  Chen, X., Sanchez, G. N., Schnitzer, M. J., Delp, S. L.
  2016; 49 (13): 2989-2994
- **Beyond the brain: Optogenetic control in the spinal cord and peripheral nervous system** *SCIENCE TRANSLATIONAL MEDICINE*
  Montgomery, K. L., Iyer, S. M., Christensen, A. J., Deisseroth, K., Delp, S. L.
  2016; 8 (337)
- **Simulation-Based Design for Wearable Robotic Systems: An Optimization Framework for Enhancing a Standing Long Jump** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
  Ong, C. F., Hicks, J. L., Delp, S. L.
  2016; 63 (5): 894-903
- **Evaluation of an Algorithm to Detect the First Ventilatory Threshold from Heart Rate: 2450 June 3, 10: 30 AM - 10: 45 AM.** *Medicine and science in sports and exercise*
  Silder, A., Gold, G. E., Bae, S., Ko, B., Jang, D., Delp, S. L.
  2016; 48 (5): 672-673
- **Optogenetic approaches addressing extracellular modulation of neural excitability** *SCIENTIFIC REPORTS*

Ferenczi, E. A., Vierock, J., Atsuta-Tsunoda, K., Tsunoda, S. P., Ramakrishnan, C., Gorini, C., Thompson, K., Lee, S. Y., Berndt, A., Perry, C., Minniberger, S., Vogt, A., Mattis, et al
2016; 6

- **A fast multi-obstacle muscle wrapping method using natural geodesic variations** *MULTIBODY SYSTEM DYNAMICS*
  Scholz, A., Sherman, M., Stavness, I., Delp, S., Kecskemethy, A.
  2016; 36 (2): 195-219

- **Structural foundations of optogenetics: Determinants of channelrhodopsin ion selectivity** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Berndt, A., Lee, S. Y., Wietek, J., Ramakrishnan, C., Steinberg, E. E., Rashid, A. J., Kim, H., Park, S., Santoro, A., Frankland, P. W., Iyer, S. M., Pak, S., Ahrlund-Richter, et al
  2016; 113 (4): 822-829

- **Structural foundations of optogenetics: Determinants of channelrhodopsin ion selectivity.** *Proceedings of the National Academy of Sciences of the United States of America*
  Berndt, A., Lee, S. Y., Wietek, J., Ramakrishnan, C., Steinberg, E. E., Rashid, A. J., Kim, H., Park, S., Santoro, A., Frankland, P. W., Iyer, S. M., Pak, S., Ährlund-Richter, et al
  2016; 113 (4): 822-9

- **A Biomechanical Model of the Scapulothoracic Joint to Accurately Capture Scapular Kinematics during Shoulder Movements** *PLOS ONE*
  Seth, A., Matias, R., Veloso, A. P., Delp, S. L.
  2016; 11 (1)

- **A Biomechanical Model of the Scapulothoracic Joint to Accurately Capture Scapular Kinematics during Shoulder Movements.** *PloS one*
  Seth, A., Matias, R., Veloso, A. P., Delp, S. L.
  2016; 11 (1): e0141028

- **Optogenetic approaches addressing extracellular modulation of neural excitability.** *Scientific reports*
  Ferenczi, E. A., Vierock, J., Atsuta-Tsunoda, K., Tsunoda, S. P., Ramakrishnan, C., Gorini, C., Thompson, K., Lee, S. Y., Berndt, A., Perry, C., Minniberger, S., Vogt, A., Mattis, et al
  2016; 6: 23947-?

- **Optogenetic and chemogenetic strategies for sustained inhibition of pain.** *Scientific reports*
  Iyer, S. M., Vesuna, S., Ramakrishnan, C., Huynh, K., Young, S., Berndt, A., Lee, S. Y., Gorini, C. J., Deisseroth, K., Delp, S. L.
  2016; 6: 30570-?

- **Stretching Your Energetic Budget: How Tendon Compliance Affects the Metabolic Cost of Running.** *PloS one*
  Uchida, T. K., Hicks, J. L., Dembia, C. L., Delp, S. L.
  2016; 11 (3)

- **In Vivo Imaging of Human Sarcomere Twitch Dynamics in Individual Motor Units.** *Neuron*
  Sanchez, G. N., Sinha, S., Liske, H., Chen, X., Nguyen, V., Delp, S. L., Schnitzer, M. J.
  2015; 88 (6): 1109-20

- **In Vivo Imaging of Human Sarcomere Twitch Dynamics in Individual Motor Units** *NEURON*
  Sanchez, G. N., Sinha, S., Liske, H., Chen, X., Viet Nguyen, V., Delp, S. L., Schnitzer, M. J.
  2015; 88 (6): 1109-1120

- **The Role of Cartilage Stress in Patellofemoral Pain** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
  Besier, T. F., Pal, S., Draper, C. E., Fredericson, M., Gold, G. E., Delp, S. L., Beaupre, G. S.
  2015; 47 (11): 2416-2422

- **The mobilize center: an NIH big data to knowledge center to advance human movement research and improve mobility.** *Journal of the American Medical Informatics Association*
  Ku, J. P., Hicks, J. L., Hastie, T., Leskovec, J., Ré, C., Delp, S. L.
  2015; 22 (6): 1120-1125

- **Wirelessly powered, fully internal optogenetics for brain, spinal and peripheral circuits in mice.** *Nature methods*
  Montgomery, K. L., Yeh, A. J., Ho, J. S., Tsao, V., Mohan Iyer, S., Grosenick, L., Ferenczi, E. A., Tanabe, Y., Deisseroth, K., Delp, S. L., Poon, A. S.
  2015; 12 (10): 969-974

- **Self-Tracking Energy Transfer for Neural Stimulation in Untethered Mice** *PHYSICAL REVIEW APPLIED*
  Ho, J. S., Tanabe, Y., Iyer, S. M., Christensen, A. J., Grosenick, L., Deisseroth, K., Delp, S. L., Poon, A. S.
  2015; 4 (2)
- **Muscle velocity and inertial force from phase contrast MRI** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
  Wentland, A. L., McWalter, E. J., Pal, S., Delp, S. L., Gold, G. E.
  2015; 42 (2): 526-532
- **Muscle velocity and inertial force from phase contrast MRI.** *Journal of magnetic resonance imaging : JMRI*
  Wentland, A. L., McWalter, E. J., Pal, S., Delp, S. L., Gold, G. E.
  2015; 42 (2): 526-32
- **Muscle velocity and inertial force from phase contrast MRI.** *Journal of magnetic resonance imaging*
  Wentland, A. L., McWalter, E. J., Pal, S., Delp, S. L., Gold, G. E.
  2015; 42 (2): spcone-?
- **Musculoskeletal modelling of an ostrich (Struthio camelus) pelvic limb: influence of limb orientation on muscular capacity during locomotion** *PEERJ*
  Hutchinson, J. R., Rankin, J., Rubenson, J., Rosenbluth, K. H., Siston, R. A., Delp, S. L.
  2015; 3
- **Making a meaningful impact: modelling simultaneous frictional collisions in spatial multibody systems** *PROCEEDINGS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES*
  Uchida, T. K., Sherman, M. A., Delp, S. L.
  2015; 471 (2177)
- **Making a meaningful impact: modelling simultaneous frictional collisions in spatial multibody systems.** *Proceedings. Mathematical, physical, and engineering sciences*
  Uchida, T. K., Sherman, M. A., Delp, S. L.
  2015; 471 (2177): 20140859
- **Running with a load increases leg stiffness** *JOURNAL OF BIOMECHANICS*
  Slider, A., Besier, T., Delp, S. L.
  2015; 48 (6): 1003-1008
- **Use it or lose it: multiscale skeletal muscle adaptation to mechanical stimuli.** *Biomechanics and modeling in mechanobiology*
  Wisdom, K. M., Delp, S. L., Kuhl, E.
  2015; 14 (2): 195-215
- **T1 rho Dispersion in Articular Cartilage: Relationship to Material Properties and Macromolecular Content** *CARTILAGE*
  Keenan, K. E., Besier, T. F., Pauly, J. M., Smith, R. L., Delp, S. L., Beaupre, G. S., Gold, G. E.
  2015; 6 (2): 113-122
- **Use it or lose it: multiscale skeletal muscle adaptation to mechanical stimuli.** *Biomechanics and modeling in mechanobiology*
  Wisdom, K. M., Delp, S. L., Kuhl, E.
  2015; 14 (2): 195-215
- **Predictive Simulation Generates Human Adaptations during Loaded and Inclined Walking** *PLOS ONE*
  Dorn, T. W., Wang, J. M., Hicks, J. L., Delp, S. L.
  2015; 10 (4)
- **How tibiofemoral alignment and contact locations affect predictions of medial and lateral tibiofemoral contact forces.** *Journal of biomechanics*
  Lerner, Z. F., Demers, M. S., Delp, S. L., Browning, R. C.
  2015; 48 (4): 644-650
- **Is My Model Good Enough? Best Practices for Verification and Validation of Musculoskeletal Models and Simulations of Movement** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
  Hicks, J. L., Uchida, T. K., Seth, A., Rajagopal, A., Delp, S. L.
  2015; 137 (2)

- **Differences in muscle activity between natural forefoot and rearfoot strikers during running** *JOURNAL OF BIOMECHANICS*
  Yong, J. R., Silder, A., Delp, S. L.
  2014; 47 (15): 3593-3597
- **Are Subject-Specific Musculoskeletal Models Robust to the Uncertainties in Parameter Identification?** *PLOS ONE*
  Valente, G., Pitto, L., Testi, D., Seth, A., Delp, S. L., Stagni, R., Viceconti, M., Taddei, F.
  2014; 9 (11)
- **Musculoskeletal modelling deconstructs the paradoxical effects of elastic ankle exoskeletons on plantar-flexor mechanics and energetics during hopping** *JOURNAL OF EXPERIMENTAL BIOLOGY*
  Farris, D. J., Hicks, J. L., Delp, S. L., Sawicki, G. S.
  2014; 217 (22): 4018-4028
- **3D finite element models of shoulder muscles for computing lines of actions and moment arms** *COMPUTER METHODS IN BIOMECHANICS AND BIOMEDICAL ENGINEERING*
  Webb, J. D., Blemker, S. S., Delp, S. L.
  2014; 17 (8): 829-837
- **Quantified self and human movement: A review on the clinical impact of wearable sensing and feedback for gait analysis and intervention** *GAIT & POSTURE*
  Shull, P. B., Jirattigalachote, W., Hunt, M. A., Cutkosky, M. R., Delp, S. L.
  2014; 40 (1): 11-19
- **Neuroscience. Optogenetic regeneration.** *Science*
  Iyer, S. M., Delp, S. L.
  2014; 344 (6179): 44-45
- **Changes in Tibiofemoral Forces due to Variations in Muscle Activity during Walking** *JOURNAL OF NEUROCHEMISTRY*
  DeMers, M. S., Pal, S., Delp, S. L.
  2014; 129 (2): 769-776
- **Virally mediated optogenetic excitation and inhibition of pain in freely moving nontransgenic mice** *NATURE BIOTECHNOLOGY*
  Iyer, S. M., Montgomery, K. L., Towne, C., Lee, S. Y., Ramakrishnan, C., Deisseroth, K., Delp, S. L.
  2014; 32 (3): 274-278
- **Rejuvenation of the muscle stem cell population restores strength to injured aged muscles.** *Nature medicine*
  Cosgrove, B. D., Gilbert, P. M., Porpiglia, E., Mourkioti, F., Lee, S. P., Corbel, S. Y., Llewellyn, M. E., Delp, S. L., Blau, H. M.
  2014; 20 (3): 255-264
- **Improved Muscle Wrapping Algorithms Using Explicit Path-Error Jacobians** *6th International Workshop on Computational Kinematics (CK)*
  Scholz, A., Stavness, I., Sherman, M., Delp, S., Kecskemethy, A.
  SPRINGER-VERLAG BERLIN.2014: 395–403
- **Quantified self and human movement: a review on the clinical impact of wearable sensing and feedback for gait analysis and intervention.** *Gait & posture*
  Shull, P. B., Jirattigalachote, W., Hunt, M. A., Cutkosky, M. R., Delp, S. L.
  2014; 40 (1): 11-19
- **Subject-specific knee joint geometry improves predictions of medial tibiofemoral contact forces** *JOURNAL OF BIOMECHANICS*
  Gerus, P., Sartori, M., Besier, T. F., Fregly, B. J., Delp, S. L., Banks, S. A., Pandy, M. G., D'Lima, D. D., Lloyd, D. G.
  2013; 46 (16): 2778-2786
- **Men and women adopt similar walking mechanics and muscle activation patterns during load carriage.** *Journal of biomechanics*
  Silder, A., Delp, S. L., Besier, T.
  2013; 46 (14): 2522-2528
- **Sarcomere lengths in human extensor carpi radialis brevis measured by microendoscopy** *MUSCLE & NERVE*
  Cromie, M. J., Sanchez, G. N., Schnitzer, M. J., Delp, S. L.
  2013; 48 (2): 286-292

- **WHAT IS A MOMENT ARM? CALCULATING MUSCLE EFFECTIVENESS IN BIOMECHANICAL MODELS USING GENERALIZED COORDINATES.** *Proceedings of the ... ASME Design Engineering Technical Conferences. ASME Design Engineering Technical Conferences*
  Sherman, M. A., Seth, A., Delp, S. L.
  2013; 2013

- **Six-week gait retraining program reduces knee adduction moment, reduces pain, and improves function for individuals with medial compartment knee osteoarthritis.** *Journal of orthopaedic research*
  Shull, P. B., Silder, A., Shultz, R., Dragoo, J. L., Besier, T. F., Delp, S. L., Cutkosky, M. R.
  2013; 31 (7): 1020-1025

- **A rolling constraint reproduces ground reaction forces and moments in dynamic simulations of walking, running, and crouch gait** *JOURNAL OF BIOMECHANICS*
  Hamner, S. R., Seth, A., Steele, K. M., Delp, S. L.
  2013; 46 (10): 1772-1776

- **How muscle fiber lengths and velocities affect muscle force generation as humans walk and run at different speeds.** *journal of experimental biology*
  Arnold, E. M., Hamner, S. R., Seth, A., Millard, M., Delp, S. L.
  2013; 216: 2150-2160

- **Optical inhibition of motor nerve and muscle activity in vivo.** *Muscle & nerve*
  Liske, H., Towne, C., Anikeeva, P., Zhao, S., Feng, G., Deisseroth, K., Delp, S.
  2013; 47 (6): 916-921

- **Muscle contributions to vertical and fore-aft accelerations are altered in subjects with crouch gait.** *Gait & posture*
  Steele, K. M., Seth, A., Hicks, J. L., Schwartz, M. H., Delp, S. L.
  2013; 38 (1): 86-91

- **Stabilisation of walking by intrinsic muscle properties revealed in a three-dimensional muscle-driven simulation** *COMPUTER METHODS IN BIOMECHANICS AND BIOMEDICAL ENGINEERING*
  John, C. T., Anderson, F. C., Higginson, J. S., Delp, S. L.
  2013; 16 (4): 451-462

- **Patellar maltracking is prevalent among patellofemoral pain subjects with patella alta: An upright, weightbearing MRI study** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Pal, S., Besier, T. F., Beaupre, G. S., Fredericson, M., Delp, S. L., Gold, G. E.
  2013; 31 (3): 448-457

- **Changes in in vivo knee contact forces through gait modification** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Kinney, A. L., Besier, T. F., Silder, A., Delp, S. L., D'Lima, D. D., Fregly, B. J.
  2013; 31 (3): 434-440

- **Muscle contributions to fore-aft and vertical body mass center accelerations over a range of running speeds** *JOURNAL OF BIOMECHANICS*
  Hamner, S. R., Delp, S. L.
  2013; 46 (4): 780-787

- **Flexing computational muscle: modeling and simulation of musculotendon dynamics.** *Journal of biomechanical engineering*
  Millard, M., Uchida, T., Seth, A., Delp, S. L.
  2013; 135 (2): 021005-?

- **Toe-in gait reduces the first peak knee adduction moment in patients with medial compartment knee osteoarthritis** *JOURNAL OF BIOMECHANICS*
  Shull, P. B., Shultz, R., Slider, A., Dragoo, J. L., Besier, T. F., Cutkosky, M. R., Delp, S. L.
  2013; 46 (1): 122-128

- **Optogenetic control of targeted peripheral axons in freely moving animals.** *PloS one*
  Towne, C., Montgomery, K. L., Iyer, S. M., Deisseroth, K., Delp, S. L.
  2013; 8 (8): e72691

- **Optogenetic control of targeted peripheral axons in freely moving animals.** *PloS one*

Towne, C., Montgomery, K. L., Iyer, S. M., Deisseroth, K., Delp, S. L.
2013; 8 (8)

- **Optical control of neuronal excitation and inhibition using a single opsin protein, ChR2.** *Scientific reports*
  Liske, H., Qian, X., Anikeeva, P., Deisseroth, K., Delp, S.
  2013; 3: 3110-?

- **How much muscle strength is required to walk in a crouch gait?** *JOURNAL OF BIOMECHANICS*
  Steele, K. M., van der Krogt, M. M., Schwartz, M. H., Delp, S. L.
  2012; 45 (15): 2564-2569

- **Comparison of MRI and 18F-NaF PET/CT in patients with patellofemoral pain** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
  Draper, C. E., Quon, A., Fredericson, M., Besier, T. F., Delp, S. L., Beaupre, G. S., Gold, G. E.
  2012; 36 (4): 928-932

- **Contributions of muscles to mediolateral ground reaction force over a range of walking speeds** *JOURNAL OF BIOMECHANICS*
  John, C. T., Seth, A., Schwartz, M. H., Delp, S. L.
  2012; 45 (14): 2438-2443

- **Optimizing Locomotion Controllers Using Biologically-Based Actuators and Objectives** *ACM TRANSACTIONS ON GRAPHICS*
  Wang, J. M., Hamner, S. R., Delp, S. L., Koltun, V.
  2012; 31 (4)

- **Predicting the metabolic cost of incline walking from muscle activity and walking mechanics** *JOURNAL OF BIOMECHANICS*
  Slider, A., Besier, T., Delp, S. L.
  2012; 45 (10): 1842-1849

- **Patellar tilt correlates with vastus lateralis: Vastus medialis activation ratio in maltracking patellofemoral pain patients** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Pal, S., Besier, T. F., Draper, C. E., Fredericson, M., Gold, G. E., Beaupre, G. S., Delp, S. L.
  2012; 30 (6): 927-933

- **How robust is human gait to muscle weakness?** *GAIT & POSTURE*
  van der Krogt, M. M., Delp, S. L., Schwartz, M. H.
  2012; 36 (1): 113-119

- **Compressive tibiofemoral force during crouch gait** *GAIT & POSTURE*
  Steele, K. M., Demers, M. S., Schwartz, M. H., Delp, S. L.
  2012; 35 (4): 556-560

- **Grand challenge competition to predict in vivo knee loads** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Fregly, B. J., Besier, T. F., Lloyd, D. G., Delp, S. L., Banks, S. A., Pandy, M. G., D'Lima, D. D.
  2012; 30 (4): 503-513

- **Simbios: an NIH national center for physics-based simulation of biological structures** *JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION*
  Delp, S. L., Ku, J. P., Pande, V. S., Sherman, M. A., Altman, R. B.
  2012; 19 (2): 186-189

- **Patients with patellofemoral pain exhibit elevated bone metabolic activity at the patellofemoral joint** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Draper, C. E., Fredericson, M., Gold, G. E., Besier, T. F., Delp, S. L., Beaupre, G. S., Quon, A.
  2012; 30 (2): 209-213

- **Characteristics associated with improved knee extension after strength training for individuals with cerebral palsy and crouch gait.** *Journal of pediatric rehabilitation medicine*
  Steele, K. M., Damiano, D. L., Eek, M. N., Unger, M., Delp, S. L.
  2012; 5 (2): 99-106

- **Optimizing Locomotion Controllers Using Biologically-Based Actuators and Objectives.** *ACM transactions on graphics*
  Wang, J. M., Hamner, S. R., Delp, S. L., Koltun, V. n.

2012; 31 (4)

- **A COMPUTATIONALLY EFFICIENT MUSCLE MODEL** *ASME Summer Bioengineering Conference (SBC)*
  Millard, M., Delp, S.
  AMER SOC MECHANICAL ENGINEERS.2012: 1055–1056
- **EXPERIMENTAL EVALUATION OF COMPUTATIONALLY PREDICTED CHANGES IN KNEE LOADS RESULTING FROM MEDIAL THRUST GAIT** *ASME Summer Bioengineering Conference (SBC)*
  Hall, A. L., Walter, J. P., Besier, T. F., Silder, A., Delp, S. L., D'Lima, D. D., Fregly, B. J.
  AMER SOC MECHANICAL ENGINEERS.2012: 189–190
- **CHANGES IN MEDIAL KNEE CONTACT FORCE THROUGH GAIT MODIFICATION** *ASME Summer Bioengineering Conference (SBC)*
  Hall, A. L., Besier, T. F., Silder, A., Delp, S. L., D'Lima, D. D., Fregly, B. J.
  AMER SOC MECHANICAL ENGINEERS.2012: 239–240
- **Can biomechanical variables predict improvement in crouch gait?** *GAIT & POSTURE*
  Hicks, J. L., Delp, S. L., Schwartz, M. H.
  2011; 34 (2): 197-201
- **Fibre operating lengths of human lower limb muscles during walking** *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
  Arnold, E. M., Delp, S. L.
  2011; 366 (1570): 1530-1539
- **Mechanics, modulation and modelling: how muscles actuate and control movement Introduction** *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES*
  Higham, T. E., Biewener, A. A., Delp, S. L.
  2011; 366 (1570): 1463-1465
- **New MR Imaging Methods for Metallic Implants in the Knee: Artifact Correction and Clinical Impact** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
  Chen, C. A., Chen, W., Goodman, S. B., Hargreaves, B. A., Koch, K. M., Lu, W., Brau, A. C., Draper, C. E., Delp, S. L., Gold, G. E.
  2011; 33 (5): 1121-1127
- **Differences in Patellofemoral Kinematics between Weight-Bearing and Non-Weight-Bearing Conditions in Patients with Patellofemoral Pain** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Draper, C. E., Besier, T. F., Fredericson, M., Santos, J. M., Beaupre, G. S., Delp, S. L., Gold, G. E.
  2011; 29 (3): 312-317
- **Patellar Maltracking Correlates With Vastus Medialis Activation Delay in Patellofemoral Pain Patients** *AMERICAN JOURNAL OF SPORTS MEDICINE*
  Pal, S., Draper, C. E., Fredericson, M., Gold, G. E., Delp, S. L., Beaupre, G. S., Besier, T. F.
  2011; 39 (3): 590-598
- **Prediction of glycosaminoglycan content in human cartilage by age, T1 rho and T2 MRI** *OSTEOARTHRITIS AND CARTILAGE*
  Keenan, K. E., Besier, T. F., Pauly, J. M., Han, E., Rosenberg, J., Smith, R. L., Delp, S. L., Beaupre, G. S., Gold, G. E.
  2011; 19 (2): 171-179
- **OpenSim: a musculoskeletal modeling and simulation framework for in silico investigations and exchange** *IUTAM Symposium on Human Body Dynamics - From Multibody Systems to Biomechanics*
  Seth, A., Sherman, M., Reinbolt, J. A., Delp, S. L.
  ELSEVIER SCIENCE BV.2011: 212–232
- **Simbody: multibody dynamics for biomedical research.** *Procedia IUTAM*
  Sherman, M. A., Seth, A., Delp, S. L.
  2011; 2: 241-261
- **OpenSim: a musculoskeletal modeling and simulation framework for in silico investigations and exchange.** *Procedia IUTAM*
  Seth, A., Sherman, M., Reinbolt, J. A., Delp, S. L.
  2011; 2: 212-232

- **Analysis of Vertical and Horizontal Circular C-Arm Trajectories** *Conference on Medical Imaging 2011 - Physics of Medical Imaging*
  Maier, A., Choi, J., Keil, A., Niebler, C., Sarmiento, M., Fieselmann, A., Gold, G., Delp, S., Fahrig, R.
  SPIE-INT SOC OPTICAL ENGINEERING.2011

- **Simulation of human movement: applications using OpenSim** *IUTAM Symposium on Human Body Dynamics - From Multibody Systems to Biomechanics*
  Reinbolt, J. A., Seth, A., Delp, S. L.
  ELSEVIER SCIENCE BV.2011: 186–198

- **Simbody: multibody dynamics for biomedical research** *IUTAM Symposium on Human Body Dynamics - From Multibody Systems to Biomechanics*
  Sherman, M. A., Seth, A., Delp, S. L.
  ELSEVIER SCIENCE BV.2011: 241–261

- **Short Telomeres and Stem Cell Exhaustion Model Duchenne Muscular Dystrophy in mdx/mTR Mice** *CELL*
  Sacco, A., Mourkioti, F., Tran, R., Choi, J., Llewellyn, M., Kraft, P., Shkreli, M., Delp, S., Pomerantz, J. H., Artandi, S. E., Blau, H. M.
  2010; 143 (7): 1059-1071

- **Muscle contributions to propulsion and support during running** *JOURNAL OF BIOMECHANICS*
  Hamner, S. R., Seth, A., Delp, S. L.
  2010; 43 (14): 2709-2716

- **Minimal formulation of joint motion for biomechanisms** *NONLINEAR DYNAMICS*
  Seth, A., Sherman, M., Eastman, P., Delp, S.
  2010; 62 (1-2): 291-303

- **Orderly recruitment of motor units under optical control in vivo** *NATURE MEDICINE*
  Llewellyn, M. E., Thompson, K. R., Deisseroth, K., Delp, S. L.
  2010; 16 (10): 1161-U144

- **Muscle contributions to support and progression during single-limb stance in crouch gait** *JOURNAL OF BIOMECHANICS*
  Steele, K. M., Seth, A., Hicks, J. L., Schwartz, M. S., Delp, S. L.
  2010; 43 (11): 2099-2105

- **Contributions of muscles and passive dynamics to swing initiation over a range of walking speeds** *JOURNAL OF BIOMECHANICS*
  Fox, M. D., Delp, S. L.
  2010; 43 (8): 1450-1455

- **Variation of hamstrings lengths and velocities with walking speed** *JOURNAL OF BIOMECHANICS*
  Agarwal-Harding, K. J., Schwartz, M. H., Delp, S. L.
  2010; 43 (8): 1522-1526

- **Can Strength Training Predictably Improve Gait Kinematics? A Pilot Study on the Effects of Hip and Knee Extensor Strengthening on Lower-Extremity Alignment in Cerebral Palsy** *PHYSICAL THERAPY*
  Damiano, D. L., Arnold, A. S., Steele, K. M., Delp, S. L.
  2010; 90 (2): 269-279

- **A Model of the Lower Limb for Analysis of Human Movement** *ANNALS OF BIOMEDICAL ENGINEERING*
  Arnold, E. M., Ward, S. R., Lieber, R. L., Delp, S. L.
  2010; 38 (2): 269-279

- **Engineered Myosin VI Motors Reveal Minimal Structural Determinants of Directionality and Processivity** *JOURNAL OF MOLECULAR BIOLOGY*
  Liao, J., Elting, M. W., Delp, S. L., Spudich, J. A., Bryant, Z.
  2009; 392 (4): 862-867

- **Coarse-Grained Structural Modeling of Molecular Motors Using Multibody Dynamics** *CELLULAR AND MOLECULAR BIOENGINEERING*
  Parker, D., Bryant, Z., Delp, S. L.
  2009; 2 (3): 366-374

- **Coarse-Grained Structural Modeling of Molecular Motors Using Multibody Dynamics.** *Cellular and molecular bioengineering*
  Parker, D., Bryant, Z., Delp, S. L.
  2009; 2 (3): 366-374

- **Multiecho IDEAL Gradient-Echo Water-Fat Separation for Rapid Assessment of Cartilage Volume at 1.5 T: Initial Experience** *RADIOLOGY*
  Chen, C. A., Lu, W., John, C. T., Hargreaves, B. A., Reeder, S. B., Delp, S. L., Siston, R. A., Gold, G. E.
  2009; 252 (2): 561-567

- **Predicting outcomes of rectus femoris transfer surgery** *GAIT & POSTURE*
  Reinbolt, J. A., Fox, M. D., Schwartz, M. H., Delp, S. L.
  2009; 30 (1): 100-105

- **Knee muscle forces during walking and running in patellofemoral pain patients and pain-free controls** *JOURNAL OF BIOMECHANICS*
  Besier, T. F., Fredericson, M., Gold, G. E., Beaupre, G. S., Delp, S. L.
  2009; 42 (7): 898-905

- **Using Real-Time MRI to Quantify Altered Joint Kinematics in Subjects with Patellofemoral Pain and to Evaluate the Effects of a Patellar Brace or Sleeve on Joint Motion** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Draper, C. E., Besier, T. F., Santos, J. M., Jennings, F., Fredericson, M., Gold, G. E., Beaupre, G. S., Delp, S. L.
  2009; 27 (5): 571-577

- **Robotics-based synthesis of human motion** *JOURNAL OF PHYSIOLOGY-PARIS*
  Khatib, O., Demircan, E., De Sapio, V., Sentis, L., Besier, T., Delp, S.
  2009; 103 (3-5): 211-219

- **Mechanisms of improved knee flexion after rectus femoris transfer surgery** *JOURNAL OF BIOMECHANICS*
  Fox, M. D., Reinbolt, J. A., Ounpuu, S., Delp, S. L.
  2009; 42 (5): 614-619

- **New resource for the computation of cartilage biphasic material properties with the interpolant response surface method** *COMPUTER METHODS IN BIOMECHANICS AND BIOMEDICAL ENGINEERING*
  Keenan, K. E., Kourtis, L. C., Besier, T. F., Lindsey, D. P., Gold, G. E., Delp, S. L., Beaupre, G. S.
  2009; 12 (4): 415-422

- **Reconstruction and EMG-Informed Control, Simulation and Analysis of Human Movement for Athletics: Performance Improvement and Injury Prevention** *Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society*
  Demircan, E., Khatib, O., Wheeler, J., Delp, S.
  IEEE.2009: 6534–6537

- **IMAGING SARCOMERES OF EXTENSOR CARPI RADIALIS BREVIS IN HUMANS USING MINIMALLY INVASIVE MICROENDOSCOPY** *ASME Summer Bioengineering Conference*
  Cromie, M. J., Sanchez, G. N., Schnitzer, M. J., Delp, S. L.
  AMER SOC MECHANICAL ENGINEERS.2009: 1009–1010

- **Capacity to increase walking speed is limited by impaired hip and ankle power generation in lower functioning persons post-stroke** *GAIT & POSTURE*
  Jonkers, I., Delp, S., Patten, C.
  2009; 29 (1): 129-137

- **MUSCLE CONTRIBUTIONS TO MEDIAL-LATERAL ACCELERATION OF THE BODY DURING WALKING** *ASME Summer Bioengineering Conference*
  John, C. T., Fox, M. D., Liu, M. Q., Schwartz, M. H., Delp, S. L.
  AMER SOC MECHANICAL ENGINEERS.2009: 1127–1128

- **CROUCH GAIT REPRESENTS A SIMPLIFIED MUSCULAR SUPPORT STRATEGY DURING SINGLE-LIMB STANCE COMPARED TO UNIMPAIRED GAIT** *ASME Summer Bioengineering Conference*
  Steele, K. M., Seth, A., Hicks, J. L., Schwartz, M., Delp, S. L.
  AMER SOC MECHANICAL ENGINEERS.2009: 1093–1094

- **The Influence of Femoral Internal and External Rotation on Cartilage Stresses within the Patellofemoral Joint** *JOURNAL OF ORTHOPAEDIC RESEARCH*

Besier, T. F., Gold, G. E., Delp, S. L., Fredericson, M., Beaupre, G. S.
2008; 26 (12): 1627-1635

- **Muscle contributions to support and progression over a range of walking speeds** *JOURNAL OF BIOMECHANICS*
  Liu, M. Q., Anderson, F. C., Schwartz, M. H., Delp, S. L.
  2008; 41 (15): 3243-3252
- **Posterior Cruciate Ligament Removal Contributes to Abnormal Knee Motion during Posterior Stabilized Total Knee Arthroplasty** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Cromie, M. J., Siston, R. A., Giori, N. J., Delp, S. L.
  2008; 26 (11): 1494-1499
- **Averaging Different Alignment Axes Improves Femoral Rotational Alignment in Computer-Navigated Total Knee Arthroplasty** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
  Siston, R. A., Cromie, M. J., Gold, G. E., Goodman, S. B., Delp, S. L., Maloney, W. J., Giori, N. J.
  2008; 90A (10): 2098-2104
- **Minimally invasive high-speed imaging of sarcomere contractile dynamics in mice and humans** *NATURE*
  Llewellyn, M. E., Barretto, R. P., Delp, S. L., Schnitzer, M. J.
  2008; 454 (7205): 784-788
- **Importance of preswing rectus femoris activity in stiff-knee gait** *JOURNAL OF BIOMECHANICS*
  Reinbolt, J. A., Fox, M. D., Arnold, A. S., Ounpuu, S., Delp, S. L.
  2008; 41 (11): 2362-2369
- **The Simbios National Center: Systems biology in motion** *PROCEEDINGS OF THE IEEE*
  Schmidt, J. P., Delp, S. L., Sherman, M. A., Taylor, C. A., Pande, V. S., Altman, R. B.
  2008; 96 (8): 1266-1280
- **Feasibility of using real-time MRI to measure joint kinematics in 1.5T and open-bore 0.5T systems** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
  Draper, C. E., Santos, J. M., Kourtis, L. C., Besier, T. F., Fredericson, M., Beaupre, G. S., Gold, G. E., Delp, S. L.
  2008; 28 (1): 158-166
- **iTools: A Framework for Classification, Categorization and Integration of Computational Biology Resources** *PLOS ONE*
  Dinov, I. D., Rubin, D., Lorensen, W., Dugan, J., Ma, J., Murphy, S., Kirschner, B., Bug, W., Sherman, M., Floratos, A., Kennedy, D., Jagadish, H. V., Schmidt, et al
  2008; 3 (5)
- **Least action principles and their application to constrained and task-level problems in robotics and biomechanics** *MULTIBODY SYSTEM DYNAMICS*
  De Sapio, V., Khatib, O., Delp, S.
  2008; 19 (3): 303-322
- **Crouched postures reduce the capacity of muscles to extend the hip and knee during the single-limb stance phase of gait** *JOURNAL OF BIOMECHANICS*
  Hicks, J. L., Schwartz, M. H., Arnold, A. S., Delp, S. L.
  2008; 41 (5): 960-967
- **OpenSim: open-source software to create and analyze dynamic Simulations of movement** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
  Delp, S. L., Anderson, F. C., Arnold, A. S., Loan, P., Habib, A., John, C. T., Guendelman, E., Thelen, D. G.
  2007; 54 (11): 1940-1950
- **The effect of excessive tibial torsion on the capacity of muscles to extend the hip and knee during single-limb stance** *GAIT & POSTURE*
  Hicks, J., Arnold, A., Anderson, F., Schwartz, M., Delp, S.
  2007; 26 (4): 546-552
- **Coronal plane stability before and after total knee arthroplasty** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
  Siston, R. A., Goodman, S. B., Delp, S. L., Giori, N. J.
  2007: 43-49

- **Extending the absorbing boundary method to fit dwell-time distributions of molecular motors with complex kinetic pathways** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Liao, J., Spudich, J. A., Parker, D., Delp, S. L.
  2007; 104 (9): 3171-3176
- **Image-based musculoskeletal modeling: Applications, advances, and future opportunities** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
  Blemker, S. S., Asakawa, D. S., Gold, G. E., Delp, S. L.
  2007; 25 (2): 441-451
- **Muscular coordination of knee motion during the terminal-swing phase of normal gait** *JOURNAL OF BIOMECHANICS*
  Arnold, A. S., Thelen, D. G., Schwartz, M. H., Anderson, F. C., Delp, S. L.
  2007; 40 (15): 3314-3324
- **The Gait E-Book - Development of Effective Participatory Learning using Simulation and Active Electronic Books** *11TH MEDITERRANEAN CONFERENCE ON MEDICAL AND BIOLOGICAL ENGINEERING AND COMPUTING 2007, VOLS 1 AND 2*
  Sandholm, A., Fritzson, P., Arora, V., Delp, S., Petersson, G., Rose, J.
  2007; 16 (1-2): 685-?
- **Upper limb muscle volumes in adult subjects** *JOURNAL OF BIOMECHANICS*
  Holzbaur, K. R., Murray, W. M., Gold, G. E., Delp, S. L.
  2007; 40 (4): 742-749
- **Moment-generating capacity of upper limb muscles in healthy adults** *JOURNAL OF BIOMECHANICS*
  Holzbaur, K. R., Delp, S. L., Gold, G. E., Murray, W. M.
  2007; 40 (11): 2442-2449
- **Contributions of muscles to terminal-swing knee motions vary with walking speed** *JOURNAL OF BIOMECHANICS*
  Arnold, A. S., Schwartz, M. H., Thelen, D. G., Delp, S. L.
  2007; 40 (16): 3660-3671
- **Surgical navigation for total knee arthroplasty: A perspective** *JOURNAL OF BIOMECHANICS*
  Siston, R. A., Giori, N. J., Goodman, S. B., Delp, S. L.
  2007; 40 (4): 728-735
- **Dynamic magnetic resonance imaging of muscle function after surgery** *SKELETAL RADIOLOGY*
  Asakawa, D. S., Blemker, S. S., Gold, G. E., Delp, S. L.
  2006; 35 (12): 885-886
- **The high variability of tibial rotational alignment in total knee arthroplasty** *Open Scientific Meeting of the Knee-Society*
  Siston, R. A., Goodman, S. B., Patel, J. J., Delp, S. L., Giori, N. J.
  SPRINGER.2006: 65–69
- **Is cartilage thickness different in young subjects with and without patellofemoral pain?** *OSTEOARTHRITIS AND CARTILAGE*
  Draper, C. E., Besier, T. F., Gold, G. E., Fredericson, M., Fiene, A., Beaupre, G. S., Delp, S. L.
  2006; 14 (9): 931-937
- **Task-level approaches for the control of constrained multibody systems** *MULTIBODY SYSTEM DYNAMICS*
  De Sapio, V., Khatib, O., Delp, S.
  2006; 16 (1): 73-102
- **Intraoperative passive kinematics of osteoarthritic knees before and after total knee arthroplasty** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Siston, R. A., Giori, N. J., Goodman, S. B., Delp, S. L.
  2006; 24 (8): 1607-1614
- **The role of estimating muscle-tendon lengths and velocities of the hamstrings in the evaluation and treatment of crouch gait** *GAIT & POSTURE*
  Arnold, A. S., Liu, M. Q., Schwartz, M. H., Ounpuu, S., Delp, S. L.
  2006; 23 (3): 273-281

- **Muscle contributions to support during gait in an individual with post-stroke hemiparesis** *JOURNAL OF BIOMECHANICS*
  Higginson, J. S., Zajac, F. E., Neptune, R. R., Kautz, S. A., Delp, S. L.
  2006; 39 (10): 1769-1777
- **Physics-based simulation of biological sturctures** *3rd IEEE International Symposium on Biomedical Imaging*
  Delp, S. L., Anderson, F. C., Altman, R. B.
  IEEE.2006: 802–803
- **Kinematic and kinetic factors that correlate with improved knee flexion following treatment for stiff-knee gait** *JOURNAL OF BIOMECHANICS*
  Goldberg, S. R., Ounpuu, S., Arnold, A. S., Gage, J. R., Delp, S. L.
  2006; 39 (4): 689-698
- **Evaluation of a new algorithm to determine the hip joint center** *JOURNAL OF BIOMECHANICS*
  Siston, R. A., Delp, S. L.
  2006; 39 (1): 125-130
- **Do the hamstrings operate at increased muscle-tendon lengths and velocities after surgical lengthening?** *JOURNAL OF BIOMECHANICS*
  Arnold, A. S., Liu, M. Q., Schwartz, M. H., Ounpuu, S., Dias, L. S., Delp, S. L.
  2006; 39 (8): 1498-1506
- **Optimal control simulations reveal mechanisms by which arm movement improves standing long jump performance** *JOURNAL OF BIOMECHANICS*
  Ashby, B. M., Delp, S. L.
  2006; 39 (9): 1726-1734
- **Muscles that support the body also modulate forward progression during walking** *JOURNAL OF BIOMECHANICS*
  Liu, M. Q., Anderson, F. C., Pandy, M. G., Delp, S. L.
  2006; 39 (14): 2623-2630
- **Effect of equinus foot placement and intrinsic muscle response on knee extension during stance** *GAIT & POSTURE*
  Higginson, J. S., Zajac, F. E., Neptune, R. R., Kautz, S. A., Burgar, C. G., Delp, S. L.
  2006; 23 (1): 32-36
- **Rectus femoris and vastus intermedius fiber excursions predicted by three-dimensional muscle models** *JOURNAL OF BIOMECHANICS*
  Blemker, S. S., Delp, S. L.
  2006; 39 (8): 1383-1391
- **A modeling framework to estimate patellofemoral joint cartilage stress in vivo** *MEDICINE AND SCIENCE IN SPORTS AND EXERCISE*
  Besier, T. F., Gold, G. E., Beaupre, G. S., Delp, S. L.
  2005; 37 (11): 1924-1930
- **Three-dimensional representation of complex muscle architectures and geometries (vol 33, pg 661, 2005)** *ANNALS OF BIOMEDICAL ENGINEERING*
  Blemker, S. S., Delp, S. L.
  2005; 33 (8): 1134-1134
- **Muscular contributions to hip and knee extension during the single limb stance phase of normal gait: a framework for investigating the causes of crouch gait** *JOURNAL OF BIOMECHANICS*
  Arnold, A. S., Anderson, F. C., Pandy, M. G., Delp, S. L.
  2005; 38 (11): 2181-2189
- **Evaluation of methods that locate the center of the ankle for computer-assisted total knee arthroplasty** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
  Siston, R. A., Daub, A. C., Giori, N. J., Goodman, S. B., Delp, S. L.
  2005: 129-135
- **The variability of femoral rotational alignment in total knee arthroplasty** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
  Siston, R. A., Patel, J. J., Goodman, S. B., Delp, S. L., Giori, N. J.
  2005; 87A (10): 2276-2280

- **Analysis of hindlimb muscle moment arms in Tyrannosaurus rex using a three-dimensional musculoskeletal computer model: implications for stance, gait, and speed** *PALEOBIOLOGY*
  Hutchinson, J. R., Anderson, F. C., Blemker, S. S., Delp, S. L.
  2005; 31 (4): 676-701
- **A model of the upper extremity for simulating musculoskeletal surgery and analyzing neuromuscular control** *ANNALS OF BIOMEDICAL ENGINEERING*
  Holzbaur, K. R., Murray, W. M., Delp, S. L.
  2005; 33 (6): 829-840
- **Simulating the task-level control of human motion: a methodology and framework for implementation** *VISUAL COMPUTER*
  De Sapio, V., Warren, J., Khatib, O., Delp, S.
  2005; 21 (5): 289-302
- **Three-dimensional representation of complex muscle architectures and geometries** *ANNALS OF BIOMEDICAL ENGINEERING*
  Blemker, S. S., Delp, S. L.
  2005; 33 (5): 661-673
- **A 3D model of muscle reveals the causes of nonuniform strains in the biceps brachii** *JOURNAL OF BIOMECHANICS*
  Blemker, S. S., PINSKY, P. M., Delp, S. L.
  2005; 38 (4): 657-665
- **Patellofemoral joint contact area increases with knee flexion and weight-bearing** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Besier, T. F., Draper, C. E., Gold, G. E., Beaupre, G. S., Delp, S. L.
  2005; 23 (2): 345-350
- **Computer modeling of gait abnormalities in cerebral palsy: application to treatment planning** *THEORETICAL ISSUES IN ERGONOMICS SCIENCE*
  Arnold, A. S., Delp, S. L.
  2005; 6 (3-4): 305–12
- **Weight-bearing MRI of patellofemoral joint cartilage contact area** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
  Gold, G. E., Besier, T. F., Draper, C. E., Asakawa, D. S., Delp, S. L., Beaupre, G. S.
  2004; 20 (3): 526-530
- **Muscles that influence knee flexion velocity in double support: implications for stiff-knee gait** *JOURNAL OF BIOMECHANICS*
  Goldberg, S. R., Anderson, F. C., Pandy, M. G., Delp, S. L.
  2004; 37 (8): 1189-1196
- **Contributions of muscle forces and toe-off kinematics to peak knee flexion during the swing phase of normal gait: an induced position analysis** *JOURNAL OF BIOMECHANICS*
  Anderson, F. C., Goldberg, S. R., Pandy, M. G., Delp, S. L.
  2004; 37 (5): 731-737
- **Three-dimensional muscle-tendon geometry after rectus femoris tendon transfer** *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME*
  Asakawa, D. S., Blemker, S. S., Rab, G. T., Bagley, A., Delp, S. L.
  2004; 86A (2): 348-354
- **Magnetic resonance imaging findings after rectus femoris transfer surgery** *3rd Special Scientific Session of the International-Skeletal-Society*
  Gold, G. E., Asakawa, D. S., Blemker, S. S., Delp, S. L.
  SPRINGER.2004: 34–40
- **Real-time imaging of skeletal muscle velocity** *9th Annual Meeting of the ISMRM*
  Asakawa, D. S., Nayak, K. S., Blemker, S. S., Delp, S. L., Pauly, J. M., Nishimura, D. G., Gold, G. E.
  JOHN WILEY & SONS INC.2003: 734–39
- **Cine phase-contrast magnetic resonance imaging as a tool for quantification of skeletal muscle motion.** *Seminars in musculoskeletal radiology*
  Asakawa, D. S., Pappas, G. P., Blemker, S. S., Drace, J. E., Delp, S. L.

2003; 7 (4): 287-295

- **Biomechanics of the Steindler flexorplasty surgery: A computer simulation study** *JOURNAL OF HAND SURGERY-AMERICAN VOLUME*
  Saul, K. R., Murray, W. M., Hentz, V. R., Delp, S. L.
  2003; 28A (6): 979-986
- **The importance of swing-phase initial conditions in stiff-knee gait** *JOURNAL OF BIOMECHANICS*
  Goldberg, S. R., Ounpuu, S., Delp, S. L.
  2003; 36 (8): 1111-1116
- **Abnormal coupling of knee and hip moments during maximal exertions in persons with cerebral palsy** *Annual Meeting of the American-Society-of-Biomechanics*
  Thelen, D. G., Riewald, S. A., Asakawa, D. S., Sanger, T. D., Delp, S. L.
  JOHN WILEY & SONS INC.2003: 486–93
- **Generating dynamic simulations of movement using computed muscle control** *JOURNAL OF BIOMECHANICS*
  Thelen, D. G., Anderson, F. C., Delp, S. L.
  2003; 36 (3): 321-328
- **What causes increased muscle stiffness in cerebral palsy?** *MUSCLE & NERVE*
  Delp, S. L.
  2003; 27 (2): 131-132
- **Three-dimensional spatial tuning of neck muscle activation in humans** *EXPERIMENTAL BRAIN RESEARCH*
  Vasavada, A. N., Peterson, B. W., Delp, S. L.
  2002; 147 (4): 437-448
- **APONEUROSIS LENGTH AND FASCICLE INSERTION ANGLES OF THE BICEPS BRACHII** *JOURNAL OF MECHANICS IN MEDICINE AND BIOLOGY*
  Asakawa, D. S., Pappas, G. P., Drace, J. E., Delp, S. L.
  2002; 2 (3-4): 449-455
- **In vivo motion of the rectus femoris muscle after tendon transfer surgery** *JOURNAL OF BIOMECHANICS*
  Asakawa, D. S., Blemker, S. S., Gold, G. E., Delp, S. L.
  2002; 35 (8): 1029-1037
- **Nonuniform shortening in the biceps brachii during elbow flexion** *JOURNAL OF APPLIED PHYSIOLOGY*
  Pappas, G. P., Asakawa, D. S., Delp, S. L., Zajac, F. E., Drace, J. E.
  2002; 92 (6): 2381-2389
- **Scaling of peak moment arms of elbow muscles with upper extremity bone dimensions** *JOURNAL OF BIOMECHANICS*
  Murray, W. M., Buchanan, T. S., Delp, S. L.
  2002; 35 (1): 19-26
- **Three-dimensional dynamic simulation of total knee replacement motion during a step-up task** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
  Piazza, S. J., Delp, S. L.
  2001; 123 (6): 599-606
- **Three-dimensional isometric strength of neck muscles in humans** *SPINE*
  Vasavada, A. N., Li, S. P., Delp, S. L.
  2001; 26 (17): 1904-1909
- **Rotational moment arms of the medial hamstrings and adductors vary with femoral geometry and limb position: implications for the treatment of internally rotated gait** *JOURNAL OF BIOMECHANICS*
  Arnold, A. S., Delp, S. L.
  2001; 34 (4): 437-447
- **Evaluation of a deformable musculoskeletal model for estimating muscle-tendon lengths during crouch gait** *ANNALS OF BIOMEDICAL ENGINEERING*
  Arnold, A. S., Blemker, S. S., Delp, S. L.

2001; 29 (3): 263-274

- **Architecture of the rectus abdominis, quadratus lumborum, and erector spinae** *JOURNAL OF BIOMECHANICS*
  Delp, S. L., Suryanarayanan, S., Murray, W. M., Uhlir, J., Triolo, R. J.
  2001; 34 (3): 371-375
- **A computational framework for simulating and analyzing human and animal movement** *COMPUTING IN SCIENCE & ENGINEERING*
  Delp, S. L., Loan, J. P.
  2000; 2 (5): 46-55
- **The isometric functional capacity of muscles that cross the elbow** *JOURNAL OF BIOMECHANICS*
  Murray, W. M., Buchanan, T. S., Delp, S. L.
  2000; 33 (8): 943-952
- **The use of basis functions in modelling joint articular surfaces: application to the knee joint** *JOURNAL OF BIOMECHANICS*
  Dhaher, Y. Y., Delp, S. L., Rymer, W. Z.
  2000; 33 (7): 901-907
- **Do the hamstrings and adductors contribute to excessive internal rotation of the hip in persons with cerebral palsy?** *GAIT & POSTURE*
  Arnold, A. S., Asakawa, D. J., Delp, S. L.
  2000; 11 (3): 181-190
- **Accuracy of muscle moment arms estimated from MRI-based musculoskeletal models of the lower extremity.** *Computer aided surgery*
  Arnold, A. S., SALINAS, S., Asakawa, D. J., Delp, S. L.
  2000; 5 (2): 108-119
- **Moment arm and force-generating capacity of the extensor carpi ulnaris after transfer to the extensor carpi radialis brevis** *JOURNAL OF HAND SURGERY-AMERICAN VOLUME*
  Herrmann, A. M., Delp, S. L.
  1999; 24A (5): 1083-1090
- **Moment arm and force-generating capacity of the extensor carpi ulnaris after transfer to the extensor carpi radialis brevis.** *The Journal of hand surgery*
  Herrmann, A. M., Delp, S. L.
  1999; 24 (5): 1083-90
- **Variation of rotation moment arms with hip flexion** *JOURNAL OF BIOMECHANICS*
  Delp, S. L., Hess, W. E., Hungerford, D. S., Jones, L. C.
  1999; 32 (5): 493-501
- **Length changes of the hamstrings and adductors resulting from derotational osteotomies of the femur** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Schmidt, D. J., Arnold, A. S., Carroll, N. C., Delp, S. L.
  1999; 17 (2): 279-285
- **Muscular resistance to varus and valgus loads at the elbow** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
  Buchanan, T. S., Delp, S. L., Solbeck, J. A.
  1998; 120 (5): 634-639
- **Computer assisted knee replacement** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
  Delp, S. L., Stulberg, S. D., Davies, B., Picard, F., Leitner, F.
  1998: 49-56
- **Posterior tilting of the tibial component decreases femoral rollback in posterior-substituting knee replacement: A computer simulation study** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Piazza, S. J., Delp, S. L., Stulberg, S. D., Stern, S. H.
  1998; 16 (2): 264-270
- **Influence of muscle morphometry and moment arms on the moment-generating capacity of human neck muscles** *SPINE*
  Vasavada, A. N., Li, S. P., Delp, S. L.

1998; 23 (4): 412-422

- **Building biomechanical models based on medical image data: An assessment of model accuracy** *1st International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 98)*
  Murray, W. M., Arnold, A. S., Salinas, S., Durbhakula, M. M., Buchanan, T. S., Delp, S. L.
  SPRINGER-VERLAG BERLIN.1998: 539–549
- **Graphics-based modeling and analysis of gait abnormalities** *BIO-MEDICAL MATERIALS AND ENGINEERING*
  Delp, S. L., Arnold, A. S., Piazza, S. J.
  1998; 8 (3-4): 227-240
- **A bipedal, closed-chain dynamic model of the human lower extremities and pelvis for simulation-based development of standing and mobility neuroprostheses** *10th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society*
  Zhao, W. F., Kirsch, R. F., Triolo, R. J., Delp, S.
  IEEE.1998: 2605–2608
- **How muscle architecture and moment arms affect wrist flexion-extension moments** *JOURNAL OF BIOMECHANICS*
  Gonzalez, R. V., Buchanan, T. S., Delp, S. L.
  1997; 30 (7): 705-712
- **Kinematics of the freely moving head and neck in the alert cat** *EXPERIMENTAL BRAIN RESEARCH*
  Keshner, E. A., Statler, K. D., Delp, S. L.
  1997; 115 (2): 257-266
- **Surgical simulation: An emerging technology for training in emergency medicine** *PRESENCE-TELEOPERATORS AND VIRTUAL ENVIRONMENTS*
  Delp, S. L., Loan, P., Basdogan, C., Rosen, J. M.
  1997; 6 (2): 147-159
- **The action of the rectus femoris muscle following distal tendon transfer: Does it generate knee flexion moment?** *DEVELOPMENTAL MEDICINE AND CHILD NEUROLOGY*
  Riewald, S. A., Delp, S. L.
  1997; 39 (2): 99-105
- **Internal rotation gait: A compensatory mechanism to restore abduction capacity decreased by bone deformity?** *DEVELOPMENTAL MEDICINE AND CHILD NEUROLOGY*
  Arnold, A. S., KOMATTU, A. V., Delp, S. L.
  1997; 39 (1): 40-44
- **Maximum isometric moments generated by the wrist muscles in flexion-extension and radial-ulnar deviation** *JOURNAL OF BIOMECHANICS*
  Delp, S. L., Grierson, A. E., Buchanan, T. S.
  1996; 29 (10): 1371-1375
- **How superior placement of the joint center in hip arthroplasty affects the abductor muscles** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
  Delp, S. L., Wixson, R. L., KOMATTU, A. V., KOCMOND, J. H.
  1996: 137-146
- **The influence of muscles on knee flexion during the swing phase of gait** *JOURNAL OF BIOMECHANICS*
  Piazza, S. J., Delp, S. L.
  1996; 29 (6): 723-733
- **Trochanteric transfer in total hip replacement: Effects on the moment arms and force-generating capacities of the hip abductors** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Free, S. A., Delp, S. L.
  1996; 14 (2): 245–50
- **Hamstrings and psoas lengths during normal and crouch gait: Implications for muscle-tendon surgery** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Delp, S. L., Arnold, A. S., Speers, R. A., Moore, C. A.

1996; 14 (1): 144-151

- **Virtual reality and medicine: From training systems to performance machines** *IEEE 1996 Virtual Reality Annual International Symposium*
  Rosen, J. M., Laub, D. R., Pieper, S. D., Mecinski, A. M., Soltanian, H., McKenna, M. A., Chen, D., Delp, S. L., Loan, J. P., Basdogan, C.
  I E E E, COMPUTER SOC PRESS.1996: 5–13

- **TRADEOFFS BETWEEN MOTION AND STABILITY IN POSTERIOR SUBSTITUTING KNEE ARTHROPLASTY DESIGN** *JOURNAL OF BIOMECHANICS*
  Delp, S. L., KOCMOND, J. H., Stern, S. H.
  1995; 28 (10): 1155-?

- **STABILITY AND RANGE OF MOTION OF INSALL-BURSTEIN CONDYLAR PROSTHESES - A COMPUTER-SIMULATION STUDY** *JOURNAL OF ARTHROPLASTY*
  KOCMOND, J. H., Delp, S. L., Stern, S. H.
  1995; 10 (3): 383-388

- **VARIATION OF MUSCLE MOMENT ARMS WITH ELBOW AND FOREARM POSITION** *JOURNAL OF BIOMECHANICS*
  Murray, W. M., Delp, S. L., Buchanan, T. S.
  1995; 28 (5): 513-525

- **A GRAPHICS-BASED SOFTWARE SYSTEM TO DEVELOP AND ANALYZE MODELS OF MUSCULOSKELETAL STRUCTURES** *COMPUTERS IN BIOLOGY AND MEDICINE*
  Delp, S. L., Loan, J. P.
  1995; 25 (1): 21-34

- **PRESERVING PLANTAR FLEXION STRENGTH AFTER SURGICAL-TREATMENT FOR CONTRACTURE OF THE TRICEPS SURAE - A COMPUTER-SIMULATION STUDY** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Delp, S. L., STATLER, K., Carroll, N. C.
  1995; 13 (1): 96-104

- **SUPERIOR DISPLACEMENT OF THE HIP IN TOTAL JOINT REPLACEMENT - EFFECTS OF PROSTHETIC NECK LENGTH, NECK-STEM ANGLE, AND ANTEVERSION ANGLE ON THE MOMENT-GENERATING CAPACITY OF THE MUSCLES** *JOURNAL OF ORTHOPAEDIC RESEARCH*
  Delp, S. L., KOMATTU, A. V., Wixson, R. L.
  1994; 12 (6): 860-870

- **TRANSFER OF THE RECTUS FEMORIS - EFFECTS OF TRANSFER SITE ON MOMENT ARMS ABOUT THE KNEE AND HIP** *JOURNAL OF BIOMECHANICS*
  Delp, S. L., RINGWELSKI, D. A., Carroll, N. C.
  1994; 27 (10): 1201-?

- **COMPENSATING FOR CHANGES IN MUSCLE LENGTH IN TOTAL HIP-ARTHROPLASTY - EFFECTS ON THE MOMENT GENERATING CAPACITY OF THE MUSCLES** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
  Vasavada, A. N., Delp, S. L., Maloney, W. J., Schurman, D. J., Zajac, F. E.
  1994: 121-133

- **EFFECTS OF HIP CENTER LOCATION ON THE MOMENT-GENERATING CAPACITY OF THE MUSCLES** *JOURNAL OF BIOMECHANICS*
  Delp, S. L., Maloney, W.
  1993; 26 (4-5): 485-499

- **FORCE-GENERATING AND MOMENT-GENERATING CAPACITY OF LOWER-EXTREMITY MUSCLES BEFORE AND AFTER TENDON LENGTHENING** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*
  Delp, S. L., Zajac, F. E.
  1992: 247-259

- **AN INTERACTIVE GRAPHICS-BASED MODEL OF THE LOWER-EXTREMITY TO STUDY ORTHOPEDIC SURGICAL-PROCEDURES** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
  Delp, S. L., Loan, J. P., HOY, M. G., Zajac, F. E., Topp, E. L., Rosen, J. M.
  1990; 37 (8): 757-767

- **BIOMECHANICAL ANALYSIS OF THE CHIARI PELVIC OSTEOTOMY - PRESERVING HIP ABDUCTOR STRENGTH** *CLINICAL ORTHOPAEDICS AND RELATED RESEARCH*

Delp, S. L., BLECK, E. E., Zajac, F. E., Bollini, G.
1990: 189-198