

## JOURNAL MANUSCRIPTS

1. Hoang, H.X. and **Reinbolt, J.A.** Crouched Posture Maximizes Ground Reaction Forces Generated by Muscles. *Gait & Posture*, Volume 36, Number 3, Pages 405–408, July 2012.
2. Mansouri, M and **Reinbolt, J.A.** A Platform for Dynamic Simulation and Control of Movement Based on OpenSim and MATLAB. *Journal of Biomechanics*, Volume 45, Number 8, Pages 1517–1521, May 2012.
3. Donnelly, C.J., Lloyd, D.G., Elliott, B.C., and **Reinbolt, J.A.** Optimizing Whole-body Kinematics to Minimize Valgus Knee Loading During Sidestepping: Implications for ACL Injury Risk. *Journal of Biomechanics*, Volume 45, Number 8, Pages 1491–1497, May 2012.
4. **Reinbolt, J.A.**, Seth, A. and Delp, S.L. Simulation of Human Movement: Applications Using OpenSim. *Procedia IUTAM*, Volume 2, Number 1, Pages 186–198, June 2011.
5. Seth, A., Sherman, M.A., **Reinbolt, J.A.**, and Delp, S.L. OpenSim: A Musculoskeletal Modeling and Simulation Framework for In Silico Investigations and Exchange. *Procedia IUTAM*, Volume 2, Number 1, Pages 212–232, June 2011.
6. **Reinbolt, J.A.**, Fox, M.D., Schwartz, M.H., and Delp, S.L. Predicting Outcomes of Rectus Femoris Transfer Surgery. *Gait & Posture*, Volume 30, Number 1, Pages 100–105, July 2009.
7. Koh, B.I., **Reinbolt, J.A.**, George, A.D., Haftka, R.T., and Fregly, B.J. Limitations of Parallel Global Optimization for Large-Scale Human Movement Problems. *Medical Engineering & Physics*, Volume 31, Number 5, Pages 515–521, June 2009.
8. Tawhai, M., Bischoff, J., Einstein, D., Erdemir, A., Guess, T., and **Reinbolt, J.** Multiscale Modeling in Computational Biomechanics: Determining Computational Priorities and Addressing Current Challenges. *IEEE Engineering in Medicine and Biology*, Volume 28, Number 3, Pages 41–49, May/June 2009.
9. Fox, M.D., **Reinbolt, J.A.**, Öunpuu, S., and Delp, S.L. Mechanisms of Improved Knee Flexion after Rectus Femoris Transfer Surgery. *Journal of Biomechanics*, Volume 42, Number 5, Pages 614–619, March 2009.
10. **Reinbolt, J.A.**, Fox, M.D., Arnold, A.S., Öunpuu, S., and Delp, S.L. Importance of Preswing Rectus Femoris Activity in Stiff-Knee Gait. *Journal of Biomechanics*, Volume 41, Number 11, Pages 2362–2369, August 2008.
11. **Reinbolt, J.A.**, Haftka, R.T., Chmielewski, T.L., and Fregly, B.J. A Computational Framework to Predict Post-Treatment Outcome for Gait-Related Disorders. *Medical Engineering & Physics*, Volume 30, Number 4, Pages 434–443, May 2008.
12. Fregly, B.J., **Reinbolt, J.A.**, and Chmielewski, T.L. Evaluation of a Patient-Specific Cost Function to Predict the Influence of Foot Path on the Knee Adduction Torque during Gait. *Computer Methods in Biomechanics and Biomedical Engineering*, Volume 11, Number 1, Pages 63–71, February 2008.
13. Fregly, B.J., **Reinbolt, J.A.**, Rooney, K.L., Mitchell, K.H., and Chmielewski, T.L. Design of Patient-Specific Gait Modifications for Knee Osteoarthritis Rehabilitation. *IEEE Transactions on Biomedical Engineering*, Volume 54, Number 9, Pages 1687–1695, September 2007.
14. **Reinbolt, J.A.**, Haftka, R.T., Chmielewski, T.L., and Fregly, B.J. Are Patient-Specific Joint and Inertial Parameters Necessary for Accurate Inverse Dynamics Analyses of Gait? *IEEE Transactions on Biomedical Engineering*, Volume 54, Number 5, Pages 782–793, May 2007.
15. Schutte, J.F., Koh, B.I., **Reinbolt, J.A.**, Fregly, B.J., Haftka, R.T., and George, A.D. Evaluation of the Particle Swarm Algorithm for Biomechanical Optimization. *Journal of Biomechanical Engineering*, Volume 127, Number 3, Pages 465–474, June 2005.
16. **Reinbolt, J.A.**, Schutte, J.F., Fregly, B.J., Haftka, R.T., George, A.D., and Mitchell, K.H. Determination of Patient-Specific Multi-Joint Kinematic Models through Two-Level Optimization. *Journal of Biomechanics*, Volume 38, Number 3, Pages 621–626, March 2005.

17. Schutte, J.F., **Reinbolt, J.A.**, Fregly, B.J., Haftka, R.T., and George, A.D. Parallel Global Optimization with the Particle Swarm Algorithm. *International Journal of Numerical Methods in Engineering*, Volume 61, Number 13, Pages 2296–2315, December 2004.
18. Koh, B.I., **Reinbolt, J.A.**, Fregly, B.J., George, A.D., and Haftka, R.T. Evaluation of Parallel Decomposition Methods for Biomechanical Optimizations. *Computer Methods in Biomechanics and Biomedical Engineering*, Volume 7, Number 4, Pages 215–225, August 2004.
19. Tabaie, H.A., Graper, W.P., **Reinbolt, J.A.** Clinical Investigation: Endoscopic Coronary Artery Bypass Grafting with Robotic Assistance. *The Heart Surgery Forum*, #2001–11191, Volume 5, Issue 4, Pages 228–333, April 2002.
20. Connor, M.A., Handley, P.J., **Reinbolt, J.A.** Perioperative Nurse Training in Cardiothoracic Surgical Robotics. *Association of Operating Room Nurses Journal*, Volume 74, Number 6, Pages 851–856, December 2001.
21. Tabaie, H.A., **Reinbolt, J.A.**, Graper, W.P., Kelly, T.F., Connor, M.A. Endoscopic Coronary Artery Bypass Graft (E-CABG™) Procedure with Robotic Assistance. *The Heart Surgery Forum*, #1999–0552, Volume 2, Issue 4, Pages 310–317, September 1999.

#### CONFERENCE ABSTRACTS

1. Piazza, S., Mansouri, M., Torricelli, D., **Reinbolt, J.A.** and Pons, J.L. A Biomechanical Model for the Validation of Modular Control in Balance. In *Proceedings of the International Conference on NeuroRehabilitation*, Toledo, Spain, November 14–16, 2012.
2. Morgan, K.D., Donnelly, C.J., and **Reinbolt, J.A.** Muscle Force Estimates during the Weight-acceptance Phase of Single-leg Jump Landing. In *Proceedings of the 36th Annual Meeting of the American Society of Biomechanics*, Gainesville, FL, August 15–18, 2012.
3. Mansouri, M.B., Clark, A.E., and **Reinbolt, J.A.** The Use of a Platform for Dynamic Simulation of Movement: Application to Balance Recovery. In *Proceedings of the 36th Annual Meeting of the American Society of Biomechanics*, Gainesville, FL, August 15–18, 2012.
4. Odle B., Forrest, G., Dyson-Hudson T., and **Reinbolt, J.A.** Development of an OpenSim Shoulder Model for Manual Wheelchair Users with Tetraplegia. In *Proceedings of the ASME International Mechanical Engineering Congress & Exposition*, Denver, CO, November 11–17, 2011.
5. Morgan, K.D., Donnelly, C.J., and **Reinbolt, J.A.** Weakened Trunk Muscles Influence Knee Valgus Moments Associated with ACL Injury. In *Proceedings of the Biomedical Engineering Society 2011 Annual Meeting*, Hartford, CT, October 12–15, 2011.
6. Mansouri, M.B. and **Reinbolt, J.A.** A Platform for Dynamic Simulation and Control of Human Movement." In *Proceedings of the Biomedical Engineering Society 2011 Annual Meeting*, Hartford, CT, October 12–15, 2011.
7. Clark, A.E., Seth, A., and **Reinbolt, J.A.** Tendon Transfer of Biarticular Muscles Reduces Balance Recovery: A Computer Simulation Study. In *Proceedings of the Biomedical Engineering Society 2011 Annual Meeting*, Hartford, CT, October 12–15, 2011.
8. Saul K., **Reinbolt J.A.**, Blemker S., Ashby B., Delp S., Goldberg S., Siston R., Thelen D., Webb J. Teaching Human Movement to Engineers: Experiences from Nine Institutions. In *Proceedings of the 35th Annual Meeting of the American Society of Biomechanics*, Long Beach, CA, August 10–13, 2011.
9. Morgan, K.D., Donnelly, C.J., and **Reinbolt, J.A.** Muscle Forces During Single-leg Jump Landing. In *Proceedings of the 35th Annual Meeting of the American Society of Biomechanics*, Long Beach, CA, August 10–13, 2011.

10. Donnelly, C.J., Lloyd, D.G., Elliott, B.C., and **Reinbolt, J.A.** Optimizing Whole-body Kinematics to Minimize Valgus Knee Loading During Single-leg Landing: Implications for ACL Injury Risk. In *Proceedings of the XXIIIrd Congress of the International Society of Biomechanics*, Brussels, Belgium, July 3–7, 2011.
11. Hoang, H.X. and **Reinbolt, J.A.** Crouched Posture Maximizes Ground Reaction Forces Generated by Muscles. In *Proceedings of the XXIIIrd Congress of the International Society of Biomechanics*, Brussels, Belgium, July 3–7, 2011.
12. Clark, A.E., Seth, A., and **Reinbolt, J.A.** Biarticular Muscles Influence Postural Responses: Implications for Treatment of Stiff-knee Gait. In *Proceedings of the XIII International Symposium on Computer Simulation in Biomechanics*, Leuven, Belgium, June 30–July 2, 2011.
13. **Reinbolt, J.A.**, Seth, A., and Delp, S.L. Simulation of Human Movement Based on OpenSim. In *Proceedings of the IUTAM Symposium on Human Body Dynamics (Invited Presentation)*, Waterloo, ON, Canada, June 5–8, 2011.
14. Seth, A., Sherman, M., **Reinbolt, J.A.**, and Delp, S.L. A Musculoskeletal Modeling and Simulation Framework for In Silico Investigations and Exchange. In *Proceedings of the IUTAM Symposium on Human Body Dynamics (Invited Presentation)*, Waterloo, ON, Canada, June 5–8, 2011.
15. Mansouri, M.B. and **Reinbolt, J.A.** Dynamic Simulation of Movement Based on OpenSim and Matlab/Simulink. In *Proceedings of the 34th Annual Meeting of the American Society of Biomechanics*, Providence, RI, August 18–21, 2010.
16. Donnelly, C.J., Lloyd, D.G., Elliott, B.C., and **Reinbolt, J.A.** Minimizing Valgus Knee Loading During Sidestepping: Implications for ACL Injury Risk. In *Proceedings of the 6th World Congress on Biomechanics*, Suntec City, Singapore, August 1–6, 2010.
17. **Reinbolt, J.A.** and Donnelly, C.J. Improving Computed Muscle Control through Optimization to Generate Dynamic Simulations of Overground Running. In *Proceedings of the Eleventh International Symposium on the 3D Analysis of Human Movement*, San Francisco, CA, July 14–16, 2010.
18. Hoang, H.X. and **Reinbolt, J.A.** Posture Influences Ground Reaction Force: Implications for Crouch Gait. In *Proceedings of the Eleventh International Symposium on the 3D Analysis of Human Movement*, San Francisco, CA, July 14–16, 2010.
19. Seth, A., **Reinbolt, J.A.**, and Delp, S.L. Musculoskeletal Modeling: How It Began, What It Offers, and Where It Is Heading. In *Proceedings of the 7<sup>th</sup> Australasian Biomechanics Conference*, Gold Coast, Australia, November 30–December 1, 2009.
20. **Reinbolt, J.A.**, Seth, A., Hicks, J.L., and Delp, S.L. Mechanical Advantage of Crouch Gait. In *Proceedings of the 12<sup>th</sup> Biennial Computer Simulation Symposium*, Cape Town, South Africa, July 2–4, 2009.
21. Fox, M.D., **Reinbolt, J.A.**, Ounpuu, S., and Delp, S.L. Mechanisms of Improved Knee Flexion after Rectus Femoris Transfer Surgery. In *Proceedings of the 14<sup>th</sup> Annual Meeting of the Gait and Clinical Movement Analysis Society (Best Student Paper Award)*, Denver, CO, March 10–13, 2009.
22. Kerckhoffs, R., Bassingthwaite, J., **Reinbolt, J.**, and Arzberger, P. Emerging Challenges in Multiscale Modeling in Biology. In *Proceedings of the 14<sup>th</sup> Annual Pacific Symposium on Biocomputing*, The Big Island of Hawaii, January 5–9, 2009.
23. Fox, M.D., **Reinbolt, J.A.**, Ounpuu, S., and Delp, S.L. Mechanisms of Improved Knee Flexion after Rectus Femoris Transfer Surgery. In *Proceedings of the 8<sup>th</sup> Annual Biomedical Computation at Stanford Symposium*, Stanford, CA, October 25, 2008.
24. Liao, J.-C., **Reinbolt, J.**, Kerckhoffs, R., Michailova, A., and Arzberger, P. Multiscale Modeling and Simulation: From Molecules to Cells to Organisms. In *Proceedings of the 13<sup>th</sup> Annual Pacific Symposium on Biocomputing*, The Big Island of Hawaii, January 4–8, 2008.

25. **Reinbolt, J.A.**, Fox, M.D., Schwartz, M.H., and Delp, S.L. Predicting Outcomes of Treatment for Stiff-Knee Gait using Supervised Learning. In *Proceedings of the 31<sup>st</sup> Annual Meeting of the American Society of Biomechanics*, Stanford, California, August 22–25, 2007.
26. Fox, M.D., **Reinbolt, J.A.**, Arnold, A.S., Öunpuu, S., and Delp, S.L. Importance of Preswing Rectus Femoris Activity in Stiff-Knee Gait: Simulation-Based Analysis. In *Proceedings of the 31<sup>st</sup> Annual Meeting of the American Society of Biomechanics*, Stanford, California, August 22–25, 2007.
27. **Reinbolt, J.A.**, Fox, M.D., and Delp, S.L. Investigating Stiff-Knee Gait with Subject-Specific Simulations. In *Proceedings of the 7<sup>th</sup> Annual Biomedical Computation at Stanford Symposium* (Best Oral Presentation Award), Page 27, Stanford, California, October 21, 2006.
28. Fregly, B.J. and **Reinbolt, J.A.** Simulation-Based Treatment Planning for Knee Osteoarthritis. In *Proceedings of the 30<sup>th</sup> Annual Meeting of the American Society of Biomechanics* (Invited panelist presentation for special symposium on Modeling for Clinical Evaluation and Treatment), Blacksburg, Virginia, September 6–9, 2006.
29. **Reinbolt, J.A.** and Fregly, B.J. Benefits of Automatic Differentiation for Biomechanical Optimizations. In *Proceedings of the 2006 Summer Bioengineering Conference*, Amelia Island, Florida, June 21–25, 2006.
30. Fregly, B.J., **Reinbolt, J.A.**, Rooney, K.L., Mitchell, K.H., and Chmielewski, T.L. Predicting Patient-Specific Gait Modifications for Knee Osteoarthritis Rehabilitation. In *Proceedings of the 7<sup>th</sup> International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*, Manuscript 174, Juan-les-Pins, Antibes, Côte d'Azur, France, March 22–25, 2006.
31. Fregly, B.J., **Reinbolt, J.A.**, Koh, B.I., and Chmielewski, T.L. Evaluation of a Patient-Specific Cost Function to Predict the Influence of Foot Path on the Knee Adduction Torque during Gait. In *Proceedings of the 7<sup>th</sup> International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*, Manuscript 173, Juan-les-Pins, Antibes, Côte d'Azur, France, March 22–25, 2006.
32. Fregly, B.J., Rooney, K.L., and **Reinbolt, J.A.** Predicted Gait Modifications to Reduce the Peak Knee Adduction Torque. In *Proceedings of the XXth Congress of the International Society of Biomechanics and 29th Annual Meeting of the American Society of Biomechanics*, Page 283, Cleveland, Ohio, July 31–August 5, 2005.
33. **Reinbolt, J.A.** and Fregly, B.J. Creation of Patient-Specific Dynamic Models from Three-Dimensional Movement Data using Optimization. In *Proceedings of the Tenth International Symposium on Computer Simulation in Biomechanics*, Cleveland, Ohio, July 28–30, 2005.
34. Koh, B.I., **Reinbolt, J.A.**, Fregly, B.J., and George, A.D. Parallel Decomposition Methods for Biomechanical Optimization. In *Proceedings of the Eighth International Symposium on the 3D Analysis of Human Movement*, Page 69, Tampa, Florida, March 31–April 2, 2004.
35. Fregly, B.J. and **Reinbolt, J.A.** Estimation of Body Segment Parameters from Three-Dimensional Gait Data using Optimization. In *Proceedings of the Eighth International Symposium on the 3D Analysis of Human Movement*, Page 13, Tampa, Florida, March 31–April 2, 2004.
36. **Reinbolt, J.A.**, Schutte, J.F., Haftka, R.T., George, A.D., Mitchell, K.H., and Fregly, B.J. Determination of Patient-Specific Functional Axes through Two-Level Optimization. In *Proceedings of the 2003 Summer Bioengineering Conference*, Pages 1317–1318, Key Biscayne, Florida, June 25–29, 2003.
37. Schutte, J.F., Koh, B.I., **Reinbolt, J.A.**, Haftka, R.T., George, A.D., and Fregly, B.J. Scale-Independent Biomechanical Optimization. In *Proceedings of the 2003 Summer Bioengineering Conference*, Pages 55–56, Key Biscayne, Florida, June 25–29, 2003.
38. Tabaie, H.A., Graper, W.P., **Reinbolt, J.A.** Clinical Investigation: Endoscopic Coronary Artery Bypass Grafting (E-CABG<sup>TM</sup>) with Robotic Assistance. In *Proceedings of the International Society of Minimally Invasive Cardiac Surgery*, Munich, Germany, June 27–30, 2001.

## PRESENTATIONS

1. Biomedical Engineering and Its Applications for Healthier Lives. *Tests of Engineering Aptitude, Mathematics and Science (TEAMS) Competition*, Knoxville, TN, March 2, 2012.
2. OpenSim and MATLAB®/Simulink®. *2011 HYPER Summer School on Neurorehabilitation*, La Alberca, Spain, September, 20-22, 2011.
3. Teaching Human Movement to Engineers: Experiences from Nine Institutions. *35th Annual Meeting of the American Society of Biomechanics*, Long Beach, CA, August 12, 2011.
4. OpenSim and NMS Physiome. *XXIIIrd Congress of the International Society of Biomechanics*, Brussels, Belgium, July 6, 2011.
5. Simulation of Human Movement: Applications Using OpenSim. *IUTAM Symposium on Human Body Dynamics*, Waterloo, Canada, June 6, 2011.
6. Biomedical Engineering: Neuromuscular Biomechanics. *Graduate School Information Night at The University of Tennessee*, Knoxville, Tennessee, February 23, 2011.
7. Interfacing OpenSim Models with MATLAB®/Simulink®. *OpenSim Jamboree at Stanford University*, Stanford, California, July 12, 2010.
8. Musculoskeletal Modeling: Its Evolution and Current & Future Generations. *Royal Veterinary College, University of London*, Hertfordshire, England, May 18, 2010.
9. 20/20 Vision: A Decade to Advance Research. *The University of Tennessee*, Knoxville, Tennessee, March 4, 2010.
10. Musculoskeletal Modeling: How It Began, What It Offers, and Where It Is Heading. *7th Australasian Biomechanics Conference*, Gold Coast, Australia, December 1, 2009.
11. Mechanical Advantage of Crouch Gait. *12th Biennial Computer Simulation Symposium*, Cape Town, South Africa, July 3, 2009.
12. Modeling and Simulation of Human Movement. *The University of Tennessee Department of Mechanical, Aerospace, and Biomedical Engineering*, Knoxville, Tennessee, April 16, 2009.
13. Modeling and Simulation of Human Movement. *North Carolina State University & University of North Carolina Chapel Hill Joint Department of Biomedical Engineering*, Raleigh, North Carolina, April 16, 2008.
14. OpenSim 1.1 Software Demonstration. *8th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering*, Porto, Portugal, February 29, 2008.
15. OpenSim: Patient-Specific Musculoskeletal Models and Dynamic Simulations of Movement. *8th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering* (Motion Analysis and Human Body Performance session keynote), Porto, Portugal, February 28, 2008..
16. Multiscale Modeling and Simulation: from Molecules to Cells to Organisms. *13th Annual Pacific Symposium on Biocomputing*, Kohala Coast, Big Island, Hawaii, January 4, 2008.
17. Predicting Outcomes of Treatment for Stiff-Knee Gait using Supervised Learning. *31st Annual Meeting of the American Society of Biomechanics*, Stanford, California, August 23, 2007.
18. Investigating Stiff-Knee Gait with Subject-Specific Simulations. *7th Annual Biomedical Computation at Stanford Symposium* (Best Oral Presentation Award), Stanford, California, October 21, 2006.
19. Biomechanical Simulation Needs: Patient-Specific Dynamic Modeling to Predict Functional Outcomes. *SimTK Advisor Workshop*, Stanford, California, June 1, 2006.
20. Patient-Specific Dynamic Modeling to Predict Functional Outcomes. *National Center for Physics-Based Simulation of Biological Structures*, Stanford, California, January 17, 2006.

21. Creation of Patient-Specific Dynamic Models from Three-Dimensional Movement Data using Optimization. *Tenth International Symposium on Computer Simulation in Biomechanics*, Cleveland, Ohio, July 29, 2005.
22. Determination of Patient-Specific Functional Axes through Two-Level Optimization. *2003 Summer Bioengineering Conference*, Key Biscayne, Florida, June 27, 2003.
23. Creating the OR of the Future. *Zhong Shan Hospital*, Shanghai, China, November 13, 2000.
24. Minimally Invasive Surgery Utilizing Computer and Robotic Surgical Systems. *Biomedical Engineering Society 2000 Annual Fall Meeting*, Seattle, Washington, October 14, 2000.
25. ZEUS™ Robotic Microsurgical System. *Sarasota Memorial Hospital*, Sarasota, Florida, February 27, 1999.