

Computational Biomechanics Laboratory News Archive

Lab research featured at the annual meeting of the Orthopaedic Research Society

February, 2019

Computational lab members recently presented their work at the [annual meeting of the Orthopaedic Research Society](#), or ORS! In addition lab member Steven Mell, PhD won a Force & Motion Foundation/ORS Young Scientist Travel Grant to attend the meeting and present his work. Abstracts presented by a member of the Computational Biomechanics Lab can be found at the links below.

- Femoral Offset and Topographical Geometry are More Important Determinants of Taper Damage in Total Hip Modular Junctions than Flexural Rigidity. [#0285](#). Stephanie M. McCarthy; Sean M. Kearns; Deborah J. Hall; Laura Quigley; Brett R. Levine; Robin Pourzal; **Hannah J. Lundberg**
- Does ACL Retention in TKRs Affect Shear Forces on the Tibial Component During Normal Gait? [#0363](#). Jacqueline C. Simon; **Hannah J. Lundberg**; Craig J. Della Valle; Markus A. Wimmer
- Total Knee Replacement Wear is Most Sensitive to Transverse Plane Alignment- A Parametric Finite Element Study. [#0880](#). **Steven P. Mell**; Markus A. Wimmer; Joshua J. Jacobs; **Hannah J. Lundberg**
- Sensitivity of Total Knee Replacement Wear to Tibial Component Malrotation. [#0885](#). **Steven P. Mell**; Spencer Fullam; Markus A. Wimmer; **Hannah J. Lundberg**
- Corrosion In THR Modular Junction: Micro-segregations Within CoCrMo Alloy Enhance Corrosion Processes Under Non-inflammatory And Progressive Inflammatory Conditions. [#1901](#). Diane Alkatout; Shruti Salunkhe; Divya Bijukumar; Stephanie McCarthy; Deborah Hall; **Hannah Lundberg**; Robin Pourzal; Mathew T. Mathew
- Fusion Combined with Disc Degeneration is a Higher Risk Factor in Causing Adjacent Segment Disease than Fusion or Disc Degeneration alone. [#1678](#). **Raghu N. Natarajan**; Ayushmita De
- Length of Fusion is a Significant Risk Factor In Development of Adjacent Disc Disease in a Lumbar Spine A Finite Element Study. [#1680](#). **Raghu N. Natarajan**; Kazuhiro Hasegawa
- Effects of Taper Mismatch Angle and Head Topography on Modular Hip Taper Contact Mechanics. [#2131](#). **Jonathan A. Gustafson**; Robin Pourzal; **Hannah Lundberg**

Congratulations to lab members Steven Mell and Jonathan Gustafson!

March, 2018

Steven Mell, BSE won best podium presentation at the annual meeting of the Orthopaedic Research Society, or ORS for his work "Sensitivity of Total Knee Replacement Volumetric Wear to Femoral Center of Rotation-A Parametric Finite Element Study". Jonathan Gustafson, PhD was a new investigator recognition award finalist. Their abstracts, and other abstracts presented by member of the Computational Biomechanics Lab can be found at the links below.

Lab members will present at the annual meeting of the Orthopaedic Research Society

January 12, 2018

Computational lab members recently had their abstracts accepted for presentation at the [annual meeting of the Orthopaedic Research Society](#), or ORS! The following abstracts will be presented during the meeting from March 10-13, 2018 in New Orleans, LA.

- Study On Osteoporosis As A Risk Factor For Adjacent Disc Disease In A Lumbar Spine. **Raghu N. Natarajan**; Anju Chothiakadavil-George

- Effect Of Cage Height Dimensions In Stand-alone Lateral Lumbar Interbody Fusion:a Finite Element Based Biomechanical Study. **Raghu N. Natarajan**; Aniruddh Nayak; Gunnar BJ Andersson; Mathew Colman; Howard An
- Patient-Derived Multi-Activity Inputs for Total Knee Wear Testing. Spencer Fullam; Diego Orozco Villasenor; Patricia Luna Ferrer; Gauthier Loubrieu; Jacqueline Simon; **Hannah Lundberg**; Michel Laurent; Markus Wimmer
- Sensitivity of Total Knee Replacement Volumetric Wear to Femoral Center of Rotation-A Parametric Finite Element Study. **Steven P. Mell**; Markus A. Wimmer; **Hannah J. Lundberg**
- The Effect of Patellofemoral OA on Joint Contact Stress during a Downhill Walking Task: A Modeling Study. **Jonathan A. Gustafson**; John J. Elias; G. Kelley Fitzgerald; Scott Tashman; Richard E. Debski; Shawn Farrokhi
- Surface Micro-Topography Changes Contact Mechanics in Total Hip Modular Taper Junctions: A Modeling Study. **Jonathan A. Gustafson**; **Steven P. Mell**; Robin Pourzal; **Hannah J. Lundberg**

Lab research featured on SIMULIA Blog

January 5, 2018

Computational lab members Jonathan Gustafson, PhD, and Steven Mell, were featured on [The SIMULIA Blog](#) for their work with Isight and Abaqus.