COMPUTATIONAL BIOMECHANICS FOR MEDICINE 7 (CBM 7): MICCAI 2012 WORKSHOP PROGRAMME

7.30-9.00 Registration

09.00-09.10 Opening remarks (Karol Miller)

Session 1: Computational Biomechanics of Soft Organs (Part 1)

9.10-10.00 ***Keynote 1: Cutting in real-time in corrotational elasticity and perspectives on simulating cuts***

Stéphane P.A. Bordas (Hadrien Courtecuisse, Pierre Kerfriden, Stéphane P.A. Bordas)

Cardiff University, School of Engineering, Institute of Mechanics and Advanced Materials, Cardiff, Wales, United Kingdom

10.00-10.30 ***Efficient suturing of deformable models***

Georges Younes, Julien abi-Nahed, George Turkiyyah

10.30-11.00 Coffee Break

11.00-11.30 ***Intraoperative damage monitoring of endoclamp balloon expansion using real-time finite element modeling***

Nele Famaey, Vukašin Štrbac, and Jos Vander Sloten

11.30-12.00 ***Heterogeneous biomechanical model on correcting brain deformation induced by tumor resection***

Yixun Liu, Nikos Chrisochoides

12:00-12:30 ***Registration of brain tumor images using hyper-elastic regularization***

Andac Hamamci, Gozde Unal

12.30 – 14.10 Lunch and Poster Session

Patient-specific computational models: Tools for improving the efficiency of Medical Compression Stockings

L. Dubuis, C. P.-Y. Rohan, S. Avril, P. Badel, J. Debayle

Objective evaluation of accuracy of intraoperative neuroimage registration

Revanth Reddy Garlapati, Grand Roman Joldes, Adam Wittek, Jonathan Lam, Neil Weisenfeld, Arne Hans, Simon K. Warfield, Ron Kikinis, Karol Miller

3D Algorithm for simulation of soft tissue cutting

Xia Jin, Grand Roman Joldes, Karol Miller, Adam Wittek

Simulation of congenital heart defect corrective surgeries using thin shell elements

Stefan Kislinskiy, Tomáš Golembiovský, Christian Duriez, Eugénie Riesenkampff, Titus Kuehne, Hans-Peter Meinzer, and Tobias Heimann

Intra-operative update of neuro-images: Comparison of performance of image warping using patient-specific biomechanical model and BSpline image registration

Ahmed Mostayed, Revanth Reddy Garlapati, Grand Roman Joldes, Adam Wittek, Ron Kikinis, Simon K. Warfield, Karol Miller

Trabecular bone poroelasticity for microCT-based FE models

Clara Sandino and Steven K. Boyd

Identification of tongue muscle fibre group contraction from MR images

Yikun Wang, Thiranja P. Babarenda Gamage, Poul M.F. Nielsen, Oliver Röhrle, and Martyn P. Nash

Session 2: Computational Biomechanics of Soft Organs (Part 2)

14.10-15.00 **Keynote 2:** ***Why most of the intra-operative medical robotic devices do not use biomechanical models? Some clues to explain the bottlenecks and the needed research breakthroughs***

Yohan Payan

Université Joseph Fourier - Grenoble 1 / CNRS / TIMC-IMAG UMR, Grenoble, France

15.00-15.30 ***Numeric simulation of fluid structure interaction in the aortic arch***

Suzie Brown, Jing Wang, Harvey Ho, and Stephen Tullis

15.30-16.00 Coffee Break

Session 3: Musculoskeletal System and Injury Biomechanics

16.00-16.30 ***Using multibody dynamics to design total knee replacement implants***

John L. Williams, Said T. Gomaa

16.30-17.00 ***Finite element analysis of thorax responses under quasi-static and dynamic loading***

Jikuang Yang, Fang Wang, Guibing Li, Xiaoqing Jiang

17.00-17.30 ***Using tagged MRI to quantify the 3D deformation of a cadaver brain in response to angular acceleration***

A. K. Knutsen, W.T. Wang, J. E. McEntee, J. Zhuo , R. Gullapalli, J.L. Prince, P.V. Bayly, J. B. Butman, D.L. Pham

SPECIAL EVENTS AFTER THE WORKSHOPS ON OCTOBER 1 (open to Workshops and Conference MICCAI Participants)

18:00-19:30 Student career event (Acropolis Center)

19:30 Get together party (Acropolis Center)