Schedule First International MRE workshop, Charité – Berlin

Thursday 28/09/2017

8:30-9:00	Welcome and introduction – Ingolf Sack / Judith Bergs
9:00-9:45	Keynote lecture by Kristian Franze - Brain mechanics controls neuronal growth *University of Cambridge, Cambridge, UK*
9:45-10:00	**Coffee break**
10:00-10:30	Opening talk - Armando Manduca - MR elastography: standardizing terminology and setting guidelines *Mayo Clinic, Rochester, USA*
10:30-10:45	Mathilde Bigot et al. - New 3D-printed elastography bench for MR study of engineered tissue and histology *CREATIS – site CPE, Villeurbanne, France*
10:45-11:00	Darryl Hwang et al - MREAnaylsis: Software for ROI Stiffness Quantification and Reporting *University of Southern California, Los Angeles, USA*
11:00-11:30	**Coffee break - posters and demonstrations**
11:30-11:45	Itamar Terem et al. - Revealing sub-voxel motions of brain tissue using phase-based Amplified MRI *Stanford University, Palo Alto, USA*
11:45-12:00	Cristobál Bertoglio et al. - Robust flow reconstruction and quantitative post-processing from Phase-Contrast MRI *Johann Bernoulli Institute, University of Groningen, Groningen, The Netherlands*
12:00-12:15	Pauline Lefebvre et al. - Optimal control theory applied to MR Elastography *CREATIS, Villeurbanne, France*
12:15-12:30	Simon Chatelin et al. - Identification of the viscoelastic properties in magnetic resonance elastography by coupling a finite element model and a gradient method *ICube, University of Strasbourg – CNRS, Strasbourg, France*
12:30-13:30	**Lunch break**
13:30-13:45	Daniel Fovargue et al. - Heterogeneous Multifrequency Direct Inversion in MR Elastography: A Preliminary Comparison of Finite-Difference and Finite-Element Based Approaches *King's College London, London, UK*
13:45-14:00	Matthew McGarry et al. - Reconstruction of high-resolution MR elastography motion data using nonlinear inversion *Thayer School of Engineering at Dartmouth, Hanover, USA*
14:00-14:15	Cemre Arıyürek et al. - OSS-Weighted Averaging in Multifrequency Inversion for MR Elastography *National Magnetic Resonance Research Center, Bilkent University, Ankara, Turkey*
14:15-14:30	Elijah Van Houten et al. - Power-Law Multi-Frequency MR Elastography of the human brain via Non-Linear Inversion Reconstruction *Université de Sherbrooke, Québec, Canada*
14:30-15:00	**Coffee break - posters and demonstrations**

15:00-15:15	Keith Paulsen - Spatially Resolved Damping Ratio Imaging with Non-Linear Inversion MRE in Gel-Tofu Phantoms *Thayer School of Engineering at Dartmouth, Hanover, USA*
15:15-15:30	Anthony Romano et al. - Mild TBI Studies Using Mixed Model Inversions *Naval Research Laboratory, Washington, USA*
15:30-15:45	Helen Marshall - Magnetic Resonance Elastography (MRE) Reproducibility Study in the Same Participants at Field Strengths of 1.5 , 3 and 7 Tesla *University of Edinburgh, Edinburgh, UK*
15:45-16:00	Keith Paulsen - Imaging visual cortex activity with intrinsic poro-MR elastography *Thayer School of Engineering at Dartmouth, Hanover, USA*
16:00-16:15	**Coffee break**
16:15-16:30	Philip Bayly et al. - Measurement of anisotropy in computer simulations and in porcine brain white matter ex vivo by MR elastography *Washington University in Saint Louis, Saint Louis, USA*
16:30-16:45	Faisal Fakhouri et al.- Magnetic Resonance Elastography of the Lung *The Ohio State University, Columbus, USA*
16:45-17:00	Jelizaveta Sudakova et al. - Shear wave dispersion probes fractal dimension of 3D vascular trees *St Thomas Hospital, London, UK*
17:00-18:00	Hands-on demonstrations of MRE and time harmonic ultrasound elastography
From 19:00	**Dinner and social get-together**

Friday 29/09/2017

9:00-9:45	Keynote lecture by Paul Janmey - Non-linear elasticity and relaxation in cells, tissues and biopolymer networks *University of Pennsylvania, Philadelphia, USA*
9:45-10:00	**Coffee break**
10:00-10:15	Aaron Anderson et al. - Mechanical Properties of the Healthy Aging Human Brain *University of Illinois at Urbana-Champaign, Urbana, USA*
10:15-10:30	Curtis Johnson et al. - Double Dissociation of Structure-Function Relationships in Memory and Fluid Intelligence Observed with Magnetic Resonance Elastography *University of Delaware, Newark, USA*
10:30-10:45	Gloria Fabris - Characterization of pediatric brain viscoelasticity using magnetic resonance elastography *Stevens Institute of Technology, Hoboken, USA*
10:45-11:00	Lucy Hiscox et al. - Hippocampal viscoelasticity and episodic memory performance in healthy older adults *University of Edinburgh, Edinburgh, UK*
11:00-11.30	**Coffee break - posters and demonstrations**

11:30-11:45	Anthony Romano et al. - Moderate to Severe TBI Studies Using Mixed Model Inversions *Naval Research Laboratory, Washington, USA*
11:45-12:00	Dieter Klatt - Early-stage analysis of murine models of Familial Alzheimer's disease: Preliminary results *UIC Bioengineering, Chicago, USA*
12:00-12:15	Arvin Arani et al. - An initial experience with high resolution, high frequency, brain MRE with a high performance compact 3T scanner *Mayo Clinic, Rochester, USA*
12:15-12:30	Huiming Dong et al. - Comparison of Gradient Recalled Echo and Spin-Echo Echo Planar Imaging Sequences in In Vivo Aortic MRE *The Ohio State University Wexner Medical Center, Columbus, USA*
12:30-13:30	**Lunch break**
13:30-13:45	Michiel Simons et al. - The Effect of Muscle Loading on Muscle Stiffness *Edinburgh Imaging Facility, University of Edinburgh, Edinburgh, UK*
13:45-14:00	Gwenaël Pagé et al. - Assessing tumor mechanical properties and blood perfusion with MRE and FAIR MRI at different strain levels *UMR 1149 Inserm, Paris, France*
14:00-14:15	Michael Perrins et al. - MRE Study of Muscle Recovery Following Time Spent in an Intensive Care Unit (ICU) *Edinburgh Imaging Facility, University of Edinburgh, Edinburgh, UK*
14:15-14:30	Jonathan Vappou et al. - Monitoring of High Intensity Focused Ultrasound (HIFU) ablations in real time using interventional MR Elastography (MRE) *ICube laboratory, CNRS-Université de Strasbourg, Strasbourg, France*
14:30-14:45	**Coffee break**
14:45-15:00	Michael Perrins et al. - Evidence from MRE that Muscle Engagement Strategy Influences Occurrence of Oedema Following an Exercise Induced Muscle Damage (EIMD) Protocol *Edinburgh Imaging Facility, University of Edinburgh, Edinburgh, UK*
15:00-15:15	Michiel Simons et al. - Change in Mechanical Properties and Cross Sectional Area (CSA) of Thigh Muscles Following Total Knee Replacement (TKR) Surgery *Edinburgh Imaging Facility, University of Edinburgh, Edinburgh, UK*
15:15-15:30	Jing Guo et al. - MR elastography for assessing hepatic fibrosis and steatosis in pediatric non-alcoholic fatty liver disease *Charité-Universitätsmedizin Berlin, Berlin, Germany*
15:30-16:00	Discussion panel with focus on upcoming MRE events
16:00-18:00	Hands-on demonstrations of MRE and time harmonic ultrasound elastography

Poster contributions

1. Koki Ishii et al. *Chiba University, Chiba, Japan* - Development of a Tissue-Mimicking Visco-elastic Phantom for Quantitative Assessment of MRE
2. Harish Palnitkar et al. *UIC Bioengineering, Chicago, USA* - An investigation of the relationship between the grid dimensions and wave shapes of an anisotropic fiber phantom: preliminary results
3. Angela Ariza de Schellenberger et al. *Charité-Universitätsmedizin Berlin, Berlin, Germany* - Viscoelasticity of rat liver tissue in native, lysed and decellularized states measured by 0.5 T tabletop MRE
4. Felix Schrank et al. *Charité-Universitätsmedizin Berlin, Berlin, Germany* - Heparin as MRE phantom material with viscoelastic powerlaw properties similar to soft biological tissues
5. Kisoo Kim et al. *CNRS-Université de Strasbourg, Strasbourg, France* - Multislice interventional MR Elastography using simultaneous image refocusing (SIR)
6. Gloria Fabris et al. *Stevens Institute of Technology, Hoboken, USA* - Correlating relative myelin content and dissipative properties of human brains: an in-vivo MRI study
7. Frank Sauer et al. *University of Leipzig, Leipzig, Germany* - MR Elastography on polymer networks: a proof of concept for collagen gels
8. Gergely Bertalan et al. *Charité-Universitätsmedizin Berlin, Berlin, Germany* - Tomoelastography of the mouse brain