Program for the 622nd WE Heraeus Seminar on Neuronal Mechancis, August 17-19, 2016, Bad Honnef (Germany)

Wednesday, August 17

Introduction	08:30	Daniel, Kristian, Kyle	
Introduction to neuromechanics	08:35 T	Dennis Bray	Tension-driven Axonal Growth
Growth cone mechanics	09:00 L	Daniel Suter	Mechanosensing and response in neuronal growth cones
	10:00 S	Cristina Melero	Which forces drive axon growth?
	10:15	COFFEE BREAK	
	10:45 T	Jeffrey Urbach	Biomechanics and dynamics of axonal growth cones
	11:30 S	Devrim Kilinc	Low piconewton towing of CNS axons against diffusing and surface-bound repellents requires the inhibition of motor protein-associated pathways
	11:45 T	Ulrike Engel	Bio - computational modeling of growth cones.
	12:30	LUNCH BREAK	
Axonal mechanics	14:30 L	Kyle Miller	Microtubules, motors and forces in axonal elongation
	15:30 S	Sushil Dubey	Mechanical responses of axons
	15:45 T	Timo Betz	Forces and mechanical tension in neuronal growth
	16:30	COFFEE BREAK	
	17:00 S	Rijk de Rooij	Modeling molecular mechanisms in the axon using a novel finite element framework
	17:15 T	Taher Saif	Memory under tension
	18:00	End	
	19:00	Heraeus Dinner	

Thursday, August 18

Mechanosensing	08:30 L	Kristian Franze	Mechanosensing in the nervous system
	09:30 S	David Petrik	Mechanosensing ENaC regulates proliferation of adult neural stem cells in flow-dependent manner
	09:45 T	Christoph Ballestrem	Vinculin and Talin in neuronal mechanosensing
	10:30	COFFEE BREAK	
	11:00 S	Rajesh Shahapure	Mechanical forces in axon specification
	11:15 T	Carsten Grashoff	How cells feel tissue stiffness: Second-generation tension sensors to quantify piconewton forces in cells
	12:00	LUNCH BREAK	
Brain Mechanics	14:00 L	Ellen Kuhl	Introduction to Neuromechanics
	15:00 S	Kevin Chalut	Niche stiffness underlies the ageing of oligodendrocyte progenitor cells
	15:15 T	Alain Goriely	Growth, collapse, and stalling in a mechanical model for neurite motility
	16:00	COFFEE BREAK	
	16:30 S	Stephanie Möllmert	Tissue stiffening in the course of zebrafish spinal cord regeneration
	16:45 T	Ingolf Sack	In vivo magnetic resonance elastography of the human brain
	17:30	Stefan Jorda	The Wilhelm and Else Heraeus Foundation
	17:45	POSTER SESSION	

Friday, August 19

Glial Mechanics & Pathophysiology	08:30 L	Paul Janmey	Response of CNS tissue to multi-axial strains: uncoupling shear and Young's moduli.
	09:30 S	Katarzyna Pogoda	Mechanoresponse of glioblastoma cells growing on soft matrices
	09:45 T	Jochen Guck	Mechanosensing by glial cells
	10:30	COFFEE BREAK	
	11:00 S	Aleeza Farrukh	Light responsive Laminin mimetic peptides for directional neural regeneration
	11:15 T	Daniela Dieterich	Mechanosensitivity and Neural Proteome Dynamics
	12:00	Daniel, Kristian, Kyle	Closing remarks, poster prizes, and general discussion
	12:30	LUNCH BREAK	