

Summer Workshop on Mechanics in Biology

Berlin, September 16th to 17th 2013



JULIUS WOLFF INSTITUT

Time schedule

Monday, 16th September 2013

08:30 am	Georg Duda Julius Wolff Institute, Germany	Welcome
08:35 am	Bert van Rietbergen Eindhoven University of Technology, The Netherlands	Biomechanics and mechanical signals on the tissue level (I)
09:15 am	Joachim P. Spatz Max Planck Institute for Intelligent Systems, Germany	Structural and mechanical characterization of cells and cell-ECM interactions
09:55 am	Patric Garcia Universitätsklinikum Münster, Germany	Biological and technical materials and their functional limitations from a clinical perspective
10:35 am	<i>Coffee break</i>	
10:50 am	Georg Duda Julius Wolff Institute, Germany	Tissue formation and adaptation during bone healing – the influence of mechanics and biologics
11:30 am	Viola Vogel ETH Zürich, Switzerland	How the extracellular mechanical microenvironment impacts the cellular response and cell fate decisions
12:10 pm	<i>Lunch break</i>	
01:30 pm	Poster Session	
02:30 pm to 05:30 pm	Hands on session I Introduction into measurement and stimulation techniques	02:30 pm BOSE Corporation Multi-axial loading and characterization of biological tissue and tissue engineered constructs 04:00 pm JPK Instruments AG Atomic Force Microscopy, measurement of cellular properties and interactions
07:00 pm onwards	Social gathering	Ampelmann Restaurant Stadtbahnbogen 159 in 10178 Berlin

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Tuesday, 17th September 2013

08:30 am	Robert L. Sah University of California, USA	Mechanical blueprints for functional tissue engineering
09:10 am	Ulrich Schwarz Ruprecht-Karls-Universität Heidelberg, Germany	Physical principles of cell mechanics and cellular forces
09:50 am	Kay Raum Julius Wolff Institute, Germany	Tissue structure and elastic properties – from the nansoscale to the macroscale
10:30 am	<i>Coffee break</i>	
10:50 am	Robert Harten DePuy Synthes	Biomechanics and mechanical signals on the tissue level (II)
11:30 am	Peter Fratzl Max Planck Institute of Colloids and Interfaces, Germany	Hierarchical organization of bone – the link between cell-, ECM-, and tissue mechanics
12:10 pm	<i>Lunch break</i>	
01:30 pm	Poster Session	
02:30 pm to 05:30 pm	Hands on sessions II Application of measurement and stimulation techniques (parallel sessions)	The role of mechanics in tissue organogenesis, -adaptation and -regeneration. Mechanical characterization of soft and mineralized biological material, mechanical loading of tissue and tissue-engineered constructs.