

Program

6th Symposium Physics of Cancer

Monday - September 7, 2015

Time	Speaker
13.00 - 13.15	Opening and Welcome
<i>Session I: Mechanical properties of cancer cells</i>	
13.15 – 13.45	Josef Käs <i>The EMT, an Unjamming Transition?</i>
13.45 – 14.15	Christian Dahmann <i>Signals and Mechanics Guiding Cellular Organization in Epithelia</i>
14.15 – 14.30	Jens Elgeti <i>Tissue Competition and Interface Dynamics</i>
14.30 – 14.45	Verena Ruprecht <i>Actomyosin Network Contractility Triggers a Stochastic Transformation into Highly Motile Amoeboid Cells</i>
14.45 – 15.15	Jochen Guck <i>Feeling for Cell Function: Mechanical Phenotyping at 100 cells/sec</i>
15.15 – 15.45	Coffee Break

15.45 - 16.15	Moumita Das <i>Role of Differential Physical Properties in Emergent Behavior of 3D Cell Co-cultures</i>
16.15 – 16.45	Ralph Sinkus <i>Biomechanics of Tissue and Exploring its Microstructure with Waves</i>
16.45 – 17.15	Srikala Raghavan <i>Breaking Barriers: Role of Integrins in Epithelial Homeostasis and Sterile Inflammation</i>
17.15 – 17.30	Elisabeth Fischer-Friedrich <i>Rheology of the Active Cell Cortex in Mitosis</i>
17.30 – 18.00	Kevin Chalut <i>Nuclear Mechanics and Shape in Embryonic Stem Cells</i>
Evening	Round Table: Mix of professors and students on future developments

Tuesday - September 8, 2015

Time	Speaker
<i>Session II: Membranes and the cytoskeleton</i>	
08.30 – 09.00	Elizabeth Chen <i>Mechanosensory Response to Intercellular Invasion</i>
09.00 – 09.30	Ewa Paluch <i>Actin Cortex and Plasma Membrane Mechanics in Animal Cell Morphogenesis</i>
09.30 – 10:00	Eberhard Bodenschatz <i>Chemotaxis and Actin Oscillations</i>

10:00 – 10:15	<p>Tamás Haraszi</p> <p><i>Time Dependent Actin Bundling Points Beyond the Classical Filament Image</i></p>
10.15 – 10.45	<p>Coffee Break</p>
10.45 – 11.15	<p>Amy Rowat</p> <p><i>Cancer Cell Mechanotype: From Screening to Disease Biophysics</i></p>
11.15 – 11.45	<p>Aránzazu del Campo</p> <p><i>Fibril-Like Environments Arbitrate Migratory Transitions</i></p>
11.45 – 12.15	<p>Kristine Schauer</p> <p><i>Quantification of Cell Morphology Changes During Cancer Progression</i></p>
12.15 – 12.30	<p>David Smith</p> <p><i>Programming Biological Systems Through Synthetic Nanoscale Building Blocks</i></p>
12.30– 13.00	<p>Karsten Kruse</p> <p><i>Kinetics and Dynamics of the Homeostatic Actin Cortex</i></p>
13.00 – 15.30	<p>Poster Session</p> <p>with discussions and a snack buffet</p> <p>- in front of lecture hall –</p>
<p>Social event</p>	

Wednesday - September 9, 2015

Time	Speaker
<i>Session III: Cell migration in Cancer</i>	
08.30 – 09.00	Maitrhreyi Narasimha <i>Anisotropies in Adhesion and Cytoskeletal Organisation Induced by Mechanical and Oxidative Stresses Contribute to Cell Delamination in a Drosophila Epithelium</i>
09.00 – 09.30	Magalie Faivre <i>Dynamical Behavior of Cancer Cells Migrating on Nano- and Micro-patterned Substrates</i>
09.30 – 10.00	Jae Hun Kim <i>Unjamming and Cell Shape in the Asthmatic Airway Epithelium</i>
10.00 – 10.30	Coffee Break
10.30 – 11.00	Colin Jamora <i>The Biochemical and Epigenetic Regulation of Caspase-8 in Wound-healing and Cancer</i>
11.00 – 11.30	Franziska Lautenschläger <i>Actin Waves as Determinants of Circular Cell Trajectories in Cell Amoeboid Migration</i>
11.30 – 12.00	Lisa Manning <i>Jamming and Glassiness in Dense Biological Tissues</i>
12.00 – 12.30	Tamal Das <i>Mechanoregulation of Collective Cell Migration</i>
12.30 – 12.45	Ann-Katrine West <i>Dynamics of Cancer Tissue</i>

12.45 – 14.00	Lunch
Session IV: Micro tools in cancer research	
14.00 – 14.15	Christian Wagner <i>Adhesion Strengths, Shapes and the Dynamics of Red Blood Cell Clusters at Stasis and in Microcapillary Flow</i>
14.15 – 14.30	Andrew Holle <i>Cytoskeletal Architecture of Cancer Cells During Invasion Through Three Dimensional Microchannels</i>
14.30 – 15.00	Christine Selhuber-Unkel <i>Reinforcement of Integrin-Mediated T-Lymphocyte Adhesion by TNF</i>
15.00 – 15.30	Larry Nagahara <i>Doppelgänger or Bistability: NCI's Physical Sciences-Oncology Initiative</i>
15.30 – 16.00	Heiko Rieger <i>Physics of Vascular Remodeling During Tumor Growth: Implications for Interstitial Fluid Flow and Drug Delivery</i>
16.00 – 16.30	Coffee Break
16.30 – 17.00	Laurent Kreplak <i>Understanding Damage of the Extracellular Matrix at the Single Collagen Fibril Level</i>
17.00 – 17.30	Monika Ritsch-Marte <i>Optical Stretching Forces Revisited</i>
17.30 – 17.45	Masoumeh Keshavarz <i>Characterising Single Chain Motion in a Crowded Environment</i>

17.45 – 18.15	Ingolf Sack <i>Magnetic Resonance Elastography: Towards High Resolution Scans of Soft Tissue Viscoelasticity in Radiological Routine</i>
18.15 – 18.45	Darius Köster <i>Actin and Myosin Drive Membrane Protein Dynamics in an Cell Inspired in vitro Active Composite</i>
	The End

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