

FEBS Advanced Lecture Course 2018 - Biology and pathology of cytoskeleton: the crossroads of three cytoskeletal systems

Thursday, 2018/9/20

Lecture hall/Poster area

15:30 - 17:30 Opening words Cytoskeleton in cell migration -
Session I

Lectures

Chair: Christophe Ampe

15:30 - 15:45 **Opening words**

15:45 - 16:15 **Microtubule function in the mechanosensitive regulation of focal adhesions during cell migration**

Sandrine Etienne-Manneville (Institut Pasteur and CNRS, France)

16:15 - 16:45 **Towards meta-analysis: quantification, standardization and management of cell migration data**

Marleen Van Troys (Ghent University, Belgium)

16:45 - 17:15 **The regulation of pluricellular actomyosin bundles present at the edge of epithelial sheet by the ERK-calpain signaling pathway**

Tomáš Vomastek (Institute of Microbiology, CAS, Czech Republic)

17:15 - 17:30 **Chemokines and integrins independently tune actin flow and substrate friction during intranodal migration of T cells**

Miroslav Hons (Institute of Scientific Instruments, CAS, Czech Republic)

18:00 - 19:00 Alexander Bershadsky (Mechanobiology Institute, Singapore; Weizmann Institute of Science, Israel):
Cytoskeletal self-organization and cell morphogenesis

Plenary lectures

Canteen/Café

12:00 - 15:30 Registration

Registration

17:30 - 18:00 Coffee/tea Break

Networking

19:00 - 22:00 Welcome party

Networking

Friday, 2018/9/21

Lecture hall/Poster area

09:00 - 10:30 Regulation of cytoskeleton dynamics - Session II

Lectures

Chair: Carsten Janke

09:00 - 09:30 **Microtubule nucleation by gamma-tubulin complexes**

Elmar Schiebl (University of Heidelberg, Germany)

09:30 - 10:00 **Dynamin regulates septin assembly and formin mediated actin polymerization**

Michael Way (The Francis Crick Institute, United Kingdom)

FEBS Advanced Lecture Course 2018 - Biology and pathology of cytoskeleton: the crossroads of three cytoskeletal systems

10:00 - 10:15 **Arp2/3 complex at the plant cell periphery**
Kateřina Schwarzerová (Charles University, Czech Republic)

10:15 - 10:30 **Polarization of hippocampal neurons occurs independently of centrosomal microtubule nucleation**
Stanislav Vinopal (DZNE, Germany)

11:00 - 12:00 Regulation of cytoskeleton dynamics - Session II
cont.
Chair: Carsten Janke

Lectures

11:00 - 11:30 **Controlling microtubule functions with the tubulin code**
Carsten Janke (Institut Curie, France)

11:30 - 11:45 **Post-translational modification of microtubule C-terminal tails regulates microtubule bending and binding**
Loren Hough (University of Colorado, USA)

11:45 - 12:00 **Vertebrate actins and their origins revisited**
Laura Witjes (Rommelaere Institute, Belgium)

13:30 - 15:00 Cytoskeleton and signal transduction - Session III
Chair: Sandrine Etienne-Manneville

Lectures

13:30 - 14:00 **The focal adhesion protein testin localizes to the midbody during cytokinesis and goes nuclear (and back) in interphase cells**
Christophe Ampe (Ghent University, Belgium)

14:00 - 14:30 **Multiscale imaging of Rho GTPase signaling programs regulating neuronal differentiation**
Olivier Pertz (University of Bern, Switzerland)

14:30 - 14:45 **Molecular mechanisms and functional implications of actin remodeling by Gai protein at the T cell immunological synapse**
Ning-Na Huang (NIH, USA)

14:45 - 15:00 **Molecular nature and morphological properties of self-assembling actin polymerization sites on membranes**
Hanae Shimo (University of Cambridge, United Kingdom)

15:30 - 16:30 Cytoskeleton and signal transduction - Session III
cont.
Chair: Sandrine Etienne-Manneville

Lectures

15:30 - 16:00 **Cell shape formation controlled by cytoskeleton**
Naoko Mizuno (Max Planck Institute of Biochemistry, Germany)

16:00 - 16:15 **Actomyosin contractility and cingulin regulate ZO protein stretching and folding to control barrier function and DbpA signaling**
Sandra Citi (University of Geneva, Switzerland)

16:15 - 16:30 **Myosin-IIA tyrosine phosphorylation regulates actomyosin cytoskeleton**
Cláudia Brito (IBMC, Portugal)

FEBS Advanced Lecture Course 2018 - Biology and pathology of cytoskeleton: the crossroads of three cytoskeletal systems

10:15 - 10:30 **A new mechanism for clathrin stabilization of microtubules via adaptor-like interactions on the mitotic spindle**

Alexander Bird (Max-Planck-Institut für Molekulare Physiologie, Germany)

11:00 - 12:00 Interactions between cytoskeletal systems -
Session IV cont.

Lectures

Chair: Gerhard Wiche

11:00 - 11:30 **Profilins in cell adhesion and migration**

Roger Karlsson (Stockholm University, Sweden)

11:30 - 11:45 **Universal and dynamic hand-in-hand interaction between actin and spectrin during mammalian cell mechanoadaptation**

Andrea Ghisleni (IFOM, the FIRC Institute of Molecular Oncology, Italy)

11:45 - 12:00 **Anti-tropomyosin drugs prevent rescue of vincristine-induced mitotic spindle defects**

Peter Gunning (University of New South Wales, Australia)

13:30 - 15:30 Poster session II (even numbers)

Poster Sessions

15:30 - 16:30 Cytoskeleton and organelles - Session V

Lectures

Chair: Pavel Dráber

15:30 - 16:00 **Using light to dissect and direct intracellular transport**

Lukas Kapitein (Utrecht University, The Netherlands)

16:00 - 16:15 **Cytoskeleton is involved in extracellular vesicle-neuron dynamics: an optical manipulation study in vitro**

Giulia DÇÇArrigo (International School for Advanced Studies, Italy)

16:15 - 16:30 **Adaptor protein TRAK activates kinesin-1 and increases its processivity**

Verena Henrichs (Institute of Biotechnology, CAS, Czech Republic)

17:00 - 18:00 Cytoskeleton and organelles - Session V cont.

Lectures

Chair: Pavel Dráber

17:00 - 17:30 **Altered nucleo-cytoskeleton connections underlie common polarity defects in progeria and physiologically aged cells (IUBMB Speaker)**

Gregg G. Gundersen (Columbia University, USA)

17:30 - 17:45 **Dullard-Eps8L2 interaction regulates nuclear positioning in migrating fibroblasts by perinuclear actin reorganization**

Francisco Calero (Universidade de Lisboa, Portugal)

17:45 - 18:00 **Steps leading into assembly and disassembly of spindle in meiosis I**

Martin Anger (CEITEC, Masaryk University, Czech Republic)

18:00 - 19:00 Anna Akhmanova (Utrecht University, The Netherlands): Molecular mechanisms of microtubule-based control of cell motility

Plenary lectures

Canteen/Café

08:30 - 09:00 Registration

Registration

FEBS Advanced Lecture Course 2018 - Biology and pathology of cytoskeleton: the crossroads of three cytoskeletal systems

10:30 - 11:00	Coffee/tea break	Networking
12:00 - 13:00	Lunch	Networking
16:30 - 17:00	Coffee/tea break	Networking
19:00 - 21:00	Dinner	Networking

Sunday, 2018/9/23

Lecture hall/Poster area

09:00 - 10:30 Cytoskeleton and cancer - Session VI Lectures

Chair: Marleen Van Troys

- 09:00 - 09:30 **CYRI (Fam49) proteins interact with Rac1 and restrict lamellipodia**
Laura Machesky (Cancer Research UK, United Kingdom)
- 09:30 - 10:00 **Macrophage initiated Men1^{INV}-dependent intravasation at TMEM drives tumor metastasis**
John Condeelis (Albert Einstein College of Medicine, USA)
- 10:00 - 10:15 **Actin cytoskeleton in immune evasion of cancer**
Hannah Wurzer (Luxemburg Institute of Health, Luxembourg)
- 10:15 - 10:30 **Differential regulation of invadopodia-mediated breast cancer metastasis by FAK family kinases**
Hava Gil-Henn (Bar Ilan University, Israel)

11:00 - 12:00 Cytoskeleton and cancer - Session VI cont. Lectures

Chair: Marleen Van Troys

- 11:00 - 11:30 **Exploiting cell migration analysis for basic science and clinical application**
Matthias Gunzer (University of Duisburg-Essen, Germany)
- 11:30 - 11:45 **Apelin stimulates migration and invasion abilities of colon cancer cells**
Marta Wysocka (University of Wrocław, Poland)
- 11:45 - 12:00 **Modulation of non-muscle myosin II activity defines cell populations that initiate dissemination of ovarian cancer**
Marcin Iwanicki (Stevens Institute of Technology, USA)

13:30 - 14:45 Pathobiology of cytoskeleton - Session VII Lectures

Chair: Jiří Hašek

- 13:30 - 14:00 **Altered cytoskeleton in cardiac disease caused by nuclear A-type lamins gene mutations**
Antoine Muchir (Center of Research in Myology, France)
- 14:00 - 14:15 **Acute effects of hydrostatic pressure on apical acto-myosin activity in endothelial cells**
Johannes Fels (University of Münster, Germany)
- 14:15 - 14:30 **From Stars to Scars: Drebrin coordinates the wound response and tissue protection as pathology-specific actin regulator in astrocytes during traumatic brain injury**
Kai Murk (Charité Universitätsmedizin Berlin, Germany)

FEBS Advanced Lecture Course 2018 - Biology and pathology of cytoskeleton: the crossroads of three cytoskeletal systems

14:30 - 14:45 **Biochemical characterization of mutations in alpha-actinin-1 that cause congenital macrothrombocytopenia**
Paul Young (University College Cork, Ireland)

15:15 - 16:30 Pathobiology of cytoskeleton - Session VII cont.
Closing words
Chair: Jiří Hašek

Lectures

15:15 - 15:45 **Intermediate filament cytoskeleton in mitochondrial homeostasis and cardioprotection**
Yassemi Capetanaki (Biomedical Research Foundation, Academy of Athens, Greece)

15:45 - 16:00 **Thymosin β 4 is a component of focal adhesion and regulates its formation in human melanoma cells**
Antonina Mazur (University of Wrocław, Poland)

16:00 - 16:15 **The dynamic actin cocoon: A new form of Shigella-induced actin cytoskeleton remodelling around its endocytic vacuole that regulates pathogen entry into host cells**
Sonja Kühn (Institut Pasteur, France)

16:15 - 16:30 **Closing words**

Canteen/Café

08:30 - 09:00 Registration

Registration

10:30 - 11:00 Coffee/tea break

Networking

12:00 - 13:00 Lunch

Networking

14:45 - 15:15 Coffee/tea break

Networking

17:30 - 18:30 Bus transport to Dinner cruise on the Vltava River.
Departure from Hotel Rezidence Emmy at 17:30.

Networking

18:30 - 22:00 Dinner cruise on the Vltava River. Boarding the boat at 18:30.

Networking

Monday, 2018/9/24

Canteen/Café

07:00 - 10:00 Departure

Networking