

SCIENTIFIC PROGRAM

Monday, September 17, 2018

10:00 – 12:00	Science funding, publishing and career advice by senior DGZ members (for young investigators)
10:00 – 10:40	Dr. Britta Mädge, Deutsche Forschungsgemeinschaft (DFG): How to build a career in science management
10:40 – 11:20	Dr. Petra Gross, Journal of Cell Science: Career opportunities in publishing and science communication
11:20 – 12:00	Dr. Michael Hannus, siTOOLS Biotech GmbH
12:00 – 12:50	Lunch break
12:50	Opening address
13:30 – 16:30	Session 1: Cell cycle control
	Chair: Gislene Pereira (Heidelberg, Germany)
13:30 – 14:00	Ulrike Gruneberg (Oxford, UK): Dynamic control of the spindle assembly checkpoint by distinct kinase-phosphatase modules acting on MPS1
14:00 – 14:30	Jonathan Pines (London, UK): The spindle assembly checkpoint: With great power comes great responsiveness
14:30 – 14:45	Marina Leone (Erlangen, Germany): Cardiomyocyte binucleation is associated with aberrant mitotic microtubule distribution, mislocalization of RhoA and IQGAP3, as well as defective actomyosin ring anchorage and cleavage furrow ingression
14:45 – 15:15	Coffee break
15:15 – 15:45	Gislene Pereira (Heidelberg, Germany): How the spindle position checkpoint controls genome stability in budding yeast
15:45 – 16:00	Gerd Müller (Leipzig, Germany): Cell cycle arrest: I have a DREAM
16:00 – 16:15	Julien Guizetti (Heidelberg, Germany): Elucidating atypical centrosome and nuclear microtubule organization in malaria parasites
16:15 – 16:30	Ingrid Hoffmann (Heidelberg, Germany): FBXO45/MYCBP2 reduces the sensitivity to anti-tubulin chemotherapeutics by destabilizing the tumor suppressor FBXW7
16:30 – 17:00	Coffee break
17:00 – 18:15	DGZ Awards Session
	Nikon Young Scientist Award of the DGZ:
17:00 – 17:15	Agata Zielinska (Goettingen, Germany): New insights into age-related causes of aneuploidy in mouse and human eggs

Walther Flemming Award:

17:15 – 17:30 Rubén Fernández-Busnadiego (Martinsried, Germany): Unravelling the structure of toxic protein aggregates in situ

17:30 – 17:45 Clemens Plaschka (Vienna, Austria): Structural studies of gene transcription

Binder Innovation Prize:

17:45 – 18:00 Carsten Grashoff (Muenster, Germany): Piconewton-sensitive biosensors to investigate molecular forces in cells

Werner Risau Prize:

18:00 – 18:15 Alban Longchamp (Lausanne, Switzerland): Dietary basis for the regulation of angiogenesis

18:15 – 19:00 Carl Zeiss Lecture

Cristina Lo Celso (London, UK): Healthy and malignant haematopoiesis in the bone marrow: active cells in an evolving environment

19:00 Free evening

Tuesday, September 18, 2018

09:00 – 12:00 Sessions 2-4

09:00 – 12:00 Session 2: Mechanotransduction

Chair: Sara Wickström (Helsinki, Finland)

09:00 – 09:30 Sara Wickström (Helsinki, Finland): Mechanotransduction and mechanoadaptation at the nucleoskeleton-chromatin interface

09:30 – 10:00 Jan Lammerding (Ithaca, USA): Lamin mutations cause mechanically-induced nuclear envelope rupture and DNA damage in muscle fibers

10:00 – 10:15 Matthias Rübsam (Cologne, Germany): E-cadherin binds to desmoglein to facilitate desmosome assembly

10:15 – 10:45 Coffee break

10:45 – 11:00 Ingo Thievessen (Erlangen, Germany) β -parvin orchestrates the induction of physiological cardiac hypertrophy

11:00 – 11:30 Benoît Ladoux (Paris, France): Dynamics of epithelial cells during collective migration and cell extrusion

11:30 – 11:45 Sandra Iden (Cologne, Germany): Polarity signaling governs epidermal homeostasis by coupling cortical contractility, mitotic fidelity & genome integrity

11:45 – 12:00 Jörg Höfeld (Bonn, Germany): Mechanical stress protection

09:00 – 12:00 Session 3: Translating cell biology into medical applications

Chair: Leena Bruckner-Tuderman (Freiburg, Germany)

09:00 – 09:30 Laura De Rosa (Modena, Italy): Life-saving regeneration of the entire human epidermis

by transgenic stem cells

- 09:30 – 10:00 Leena Bruckner-Tuderman (Freiburg, Germany): Repurposing biomolecules for the treatment of epidermolysis bullosa
- 10:00 – 10:15 Tina Schubert (Dresden, Germany): Development of peptidomimetics as a novel treatment for congenital adrenal hyperplasia
- 10:15 – 10:45 Coffee break
- 10:45 – 11:15 Sabine Eming (Cologne, Germany): Nutrient sensitive pathways regulating skin function
- 11:15 – 11:30 Mareike Pendzialek (Halle, Germany): Aberrant expression of microRNAs and microRNA processing genes in preimplantation embryos and placentae of diabetic rabbits
- 11:30 – 11:45 Ursula Anderer (Senftenberg, Germany): Human serum or FCS: Differentiation of human cartilage-like microtissues depends on serum selection
- 11:45 – 12:00 Jan Riedel (Halle, Germany): P90-RSK as a synthetic lethal target in pancreatic cancer – molecular characterization and therapeutic inhibition

**09:00 – 12:00 Session 4: Novel approaches to imaging in cell biology
(Royal Microscopical Society)**

Chair: Michelle Peckham (Leeds, UK)

- 09:00 – 09:30 Michelle Peckham (Leeds, UK): Using small non-antibody binding proteins (Affimers) to visualize the cytoskeleton
- 09:30 – 10:00 Maddy Parsons (London, UK): Imaging actin dynamics and interactions
- 10:00 – 10:15 Nicole Dörffer (Muenster, Germany): Acute actin regulation in endothelial cells during transmigration
- 10:15 – 10:45 Coffee break
- 10:45 – 11:15 Helge Ewers (Berlin, Germany): Understanding nanoscopic organization by shrinking probes and expanding cells
- 11:15 – 11:30 Michael Krahn (Muenster, Germany): Pals1 inhibits cell migration and metastasis in colorectal cancer
- 11:30 – 11:45 Sebastian Rumpf (Muenster, Germany): Differential requirement for translation initiation factor pathways during ecdysone- dependent neuronal remodeling
- 11:45 – 12:00 Chairs summary/general discussion

12:00 – 14:00 Poster session, Lunch

12:15 – 13:45 DGZ Member Meeting

- 14:00 – 16:50 Sessions 5-7

14:00 – 16:50 Session 5: Integrating cells into tissues

Chair: Stefan Luschmig (Muenster, Germany)

- 14:00 – 14:30 Stefan Luschmig (Muenster, Germany): How to build tight contacts between three cells:

the formation of tricellular occluding junctions in epithelia

- 14:30 – 15:00 Damian Brunner (Zurich, Switzerland): Integrating oscillatory cell contractions and tissue morphogenesis
- 15:00 – 15:15 Jörg Großhans (Goettingen, Germany): Cell quadruplets coordinate expansion and contraction to drive vertex resolution in epithelial morphogenesis
- 15:15 – 15:35 Coffee break
- 15:35 – 16:05 Caren Norden (Dresden, Germany): Cell biology in vivo: The making of the vertebrate retina from growth to lamination
- 16:05 – 16:20 Marcus Michel (Dresden, Germany): Coordinating cell behaviour during tissue replacement
- 16:20 – 16:35 Sybille Köhler (Cologne, Germany): Par3A and Par3B orchestrate podocyte polarity
- 16:35 – 16:50 Pavel Nedvetsky (Muenster, Germany): Deletion of the polarity protein PATJ perturbs cilia maintenance and morphogenesis in kidney epithelial cells

14:00 – 16:50 Session 6: Organelle dynamics

Chair: Anne Spang (Basel, Switzerland)

- 14:00 – 14:30 Francis Barr (Oxford, UK): Rab GTPase regulation at the ER-Golgi interface
- 14:30 – 15:00 Agnieszka Chacińska (Warsaw, Poland): Reporting on the status of mitochondria
- 15:00 – 15:15 Karolina Szczepanowska (Cologne, Germany): CLPP is a regulator of Complex I turnover
- 15:15 – 15:35 Coffee break
- 15:35 – 16:05 Anne Spang (Basel, Switzerland): Compartmentation - modes of intracellular organisation
- 16:05 – 16:20 Katharina B. Beer (Wuerzburg, Germany): Retrograde trafficking proteins control lipid flippase activity to inhibit extracellular vesicle budding
- 16:20 – 16:35 Julia Christina Gross (Goettingen, Germany): Ykt6 membrane-to-cytosol cycling regulates exosomal Wnt secretion
- 16:35 – 16:50 Jay Gopalakrishnan (Düsseldorf, Germany): Cilia regulation of neural stem cells in 3D brain organoids

14:00 – 16:50 Session 7: Nuclear dynamics/communication

Chair: Birthe Fahrenkrog (Brussels, Belgium)

- 14:00 – 14:30 Dorothee Dormann (Munich, Germany): Neurodegenerative diseases reveal novel functions of nuclear import receptors
- 14:30 – 15:00 Birthe Fahrenkrog (Brussels, Belgium): Mutations in nucleoporin NUP88 cause lethal fetal akinesia deformation sequence
- 15:00 – 15:15 Maria Asif (Cologne, Germany): Mutations of NUP37 and NUP107 encoding components of the nuclear pore complex cause microcephaly associated nephrotic syndrome
- 15:15 – 15:35 Coffee break

15:35 – 16:05	Denis Lafontaine (Brussels, Belgium): Using the iNo score to discriminate normal from altered nucleolar morphology, with applications in basic cell biology and potential in human disease diagnostics
16:05 – 16:20	Markus T. Bohnsack (Goettingen, Germany): The diverse roles of RNA helicases in driving structural transitions and compositional changes in RNA-protein complexes
16:20 – 16:35	Ralph Gräf (Potsdam, Germany): Permeabilization of the Dictyostelium nuclear envelope in semi-closed mitosis
16:35 – 16:50	Petros Batsios (Potsdam, Germany): Analysis of supramolecular assemblies of NE81, the first lamin-like protein in a unicellular organism
16:50 – 17:00	Break
17:00 – 20:00	Sessions 8-10
17:00 – 20:00	Session 8: Mechanisms of cell fate regulation
	Chair: Thomas Brabletz (Erlangen, Germany)
17:00 – 17:30	Thomas Brabletz (Erlangen, Germany): Cellular plasticity in cancer: Driving force and therapeutic target
17:30 – 18:00	Guido Posern (Halle, Germany): Actin-regulated MRTF transcription factors in 3D acinar morphogenesis
18:00 – 18:15	Praachi Jain (Porto, Portugal): The spectraplakins Dystonin suppresses tumorigenesis through antagonizing the activity of the YAP/TAZ oncogenes
18:15 – 18:45	Coffee break
18:45 – 19:15	Henner Farin (Frankfurt, Germany): 3-D organoids to address cell plasticity in the colon cancer microenvironment
19:15 – 19:30	Fabian-Christoph Franke (Unterschleißheim, Germany): The tumor suppressor SASH1 associates with CRK-family proteins to counteract epithelial-mesenchymal transition
19:30 – 19:45	Matthias Behr (Leipzig, Germany): A single cell surface protein controls endocrine ring gland morphogenesis and steroid production
19:45 – 20:00	Tom Seeling (Halle, Germany): Methylglyoxal and glyoxal lead to specific histone modifications in early embryos
17:00 – 20:00	Session 9: Visualizing cell organization
	Chair: Milos Galic (Muenster, Germany)
17:00 – 17:30	Takanari Inoue (Baltimore, USA): Generating force in living cells at will
17:30 – 18:00	Olivier Pertz (Bern, Switzerland): Deciphering MAPK networks controlling cell fate decisions by dynamic perturbation of signaling fluxes
18:00 – 18:15	Tobias Stauber (Berlin, Germany): Visualizing volume-regulated anion channel (VRAC) activity by intra-complex FRET allows its spatiotemporal monitoring during various cellular processes
18:15 – 18:45	Coffee break
18:45 – 19:15	Milos Galic (Muenster, Germany): Mechano-chemical self-organization determines search pattern in migratory cells

19:15 – 19:30	Tilo Pompe (Leipzig, Germany): Extracellular matrix matters – 3D collagen based matrices influence macrophage behavior
19:30 – 19:45	Dirk Ollech (Heidelberg, Germany): Reconstitution of cadherin-catenin complexes with photocleavable dimerizers for light induced dissociation of adherens junctions
19:45 – 20:00	Maja Matis (Muenster, Germany): Polarized microtubule dynamics directs cell mechanics and coordinates forces during epithelial morphogenesis
17:00 – 20:00	Session 10: Protein dynamics and cellular function
	Chair: Tina Romeis (Berlin, Germany)
17:00 – 17:30	Tina Romeis (Berlin, Germany): Recording biochemical kinase activation <i>in vivo</i> in real-time: FRET-based imaging of calcium-sensor protein kinase conformational change
17:30 – 18:00	Katharina Bürstenbinder (Halle, Germany): Calcium signaling in plant development
18:00 – 18:15	Nils Johnsson (Ulm, Germany): A time resolved protein-interaction map defines the functions of a polarity complex during polar growth in yeast
18:15 – 18:45	Coffee break
18:45 – 19:15	Marco Trujillo (Freiburg, Germany): Multi-tiered regulation of ubiquitin signalling during the immune response
19:15 – 19:30	Angelina Chirinskaite (Gatchina, Russian Federation): Analysis of amyloid properties of the Munc18-1 protein forming detergent-resistant aggregates in the brain of rat <i>Rattus norvegicus</i>
19:30 – 19:45	Enrico Warmt (Leipzig, Germany): Cortical actin contractility of single suspended cells
19:45 – 20:00	Katrin Rietscher (Leipzig, Germany): The role of plakophilins 1 & 3 as desmosomal signaling hubs controlling intercellular adhesion and proliferation in the epidermis
20:00 – 23:00	Social event

Wednesday, September 19, 2018

08:30 – 11:30	Sessions 11-13
08:30 – 11:30	Session 11: Cytoarchitecture/Cytoskeleton dynamics
	Chair: Klemens Rottner (Braunschweig, Germany)
08:30 – 09:00	Klemens Rottner (Braunschweig, Germany): Functional dissection of WAVE regulatory complex using CRISPR/Cas9
09:00 – 09:30	Anne-Cécile Reymann (Strasbourg, France): Modulation of cortical actin assembly dynamics
09:30 – 09:45	Ingo Thievessen (Erlangen, Germany): Vinculin regulates lamellipodium protrusion velocity
09:45 – 10:15	Coffee break
10:15 – 10:45	Carsten Janke (Orsay, France): Controlling microtubule functions with the tubulin code
10:45 – 11:00	Oliver Rocks (Berlin, Germany): Systematic characterization of RhoGEF/RhoGAP regulatory proteins reveals organization principles of Rho GTPase signaling

11:00 – 11:15	Jan Faix (Hannover, Germany): BMW is an exceptionally potent actin assembly factor from a human parasite
11:15 – 11:30	Frederik Tellkamp (Cologne, Germany): Defining the interactome and phosphoproteome of mammalian aPKC polarity proteins identifies novel roles in cytoskeletal and junctional regulation

08:30 – 11:30 Session 12: Principles of size control

	Chair: Rafael Carazo Salas (Bristol, UK)
08:30 – 09:00	Rafael Carazo Salas (Bristol, UK): Dynamics of human stem cell colony formation
09:00 – 09:30	Jody Rosenblatt (Salt Lake City, USA): Epithelial cell extrusion and its misregulation in disease
09:30 – 09:45	Sachiko Fujiwara (Osaka, Japan): Rho-signaling organizes hemidesmosomal cell-substrate adhesion and acinar morphogenesis of epithelial cells through controlling mechanotransduction
09:45 – 10:15	Coffee break
10:15 – 10:45	Chris Bakal (London, UK): Using image-omics to describe the systems of cell shape determination
10:45- 11:00	Lena Prange (Muenster, Germany): Acute regulation of cellular morphogenesis and migration through calcium stimulation
11:00 – 11:15	Syeda Seema Waseem (Cologne, Germany): Functional exploration of a midbody protein KIF14 as a novel cause for autosomal recessive primary microcephaly
11:15 – 11:30	Discussion
11:30 – 15:00	Lunch break

12:00 – 15:00 Session 13-14, Poster session 2, Industry event

12:20 – 14:40 Session 13: Nucleus in 4D

	Chairs: M. Cristina Cardoso (Darmstadt, Germany) and Heinrich Leonhardt (Munich, Germany)
12:20 – 12:50	Heinrich Leonhardt (Munich, Germany): HP1B phosphorylation controls protein interactions, phase separation and pluripotency exit
12:50 – 13:20	Argyris Papantonis (Cologne, Germany): Muted chromatin remodelling links deregulation of the DNA damage response and autophagy in a rare premature ageing syndrome
13:20 – 13:40	Coffee break
13:40 – 14:10	Irina Solovei (Munich, Germany): A new perspective on spatial organization of transcription in eukaryotes
14:10 – 14:40	William Earnshaw (Edinburgh, UK): Pathways to mitotic chromosome segregation: Condensin, CENP-A and their partners

12:00 – 15:00 Session 14: Self-organization

Chair: Roland Wedlich-Söldner (Muenster, Germany)

- 12:00 – 12:20 Karen Alim (Goettingen, Germany): Fluid flows shaping morphology
- 12:20 – 12:40 Min Wu (Singapore): Information content of subcellular cortical patterns
- 12:40 – 13:00 Nir Gov (Rehovot, Israel): Curved membrane proteins that recruit actin polymerization: Lamellipodia, protrusions and shape transitions
- 13:00 – 13:20 Taras Sych (Freiburg, Germany): The impact of lectin valency and structure on the organization of the plasma membrane
- 13:20 – 13:40 Coffee break
- 13:40 – 14:00 Jacob Halatek (Munich, Germany): Rethinking self-organized protein pattern formation
- 14:00 – 14:20 Karsten Kruse (Geneva, Switzerland): The Min-protein oscillations in Escherichia coli
- 14:20 – 14:40 Richard Wheeler (Dresden, Germany): Small molecules for modulating protein driven liquid-liquid phase separation in neurodegenerative disease
- 14:40 – 15:00 Jona Kayser (Berkeley, USA): Emergence of evolutionary driving forces in pattern-forming microbial populations

15:00 Farewell and announcement of 2019 meeting