

**Joint International Meeting of the German Society for Cell Biology (DGZ) and the German Society for Developmental Biology (GfE)**

**March 20 – 23, 2013, Heidelberg**

**Organized by Harald Herrmann (DGZ) and Jochen Wittbrodt (GfE)**

**Wednesday, March 20, 2013**

- 08:00 – 20:00**                    **Registration**
- 09:00 – 10:30**                    **Talk & Question Time: DFG Funding Opportunities for all Career Stages**
- Dr. Dorette Breitzkreuz (Bonn)  
German Research Foundation (DFG), Programme Director, Life Sciences 2
- Dr. Astrid Klingen (Bonn)  
German Research Foundation (DFG), Programme Officer, Life Sciences 2
- Review Board Members of the German Research Foundation (DFG)
- 11:00 – 13:00**                    **Student Symposium: The Abstract Highlights**
- Carolina Lage Crespo: The PAR polarity complex controls the directional migration of medaka macrophages to sites of tissue injury *in vivo* (PS1-15)
- Klemens Rottner: Dissection of Rac GTPase functions in protrusion and directed cell migration (PS1-16)
- Britta Muster: Discrimination of DNA repair pathways by laser microirradiation (PS2-07)
- Katrin Hoffmeyer: Wnt/  $\beta$ -Catenin Signaling Regulates Telomerase in Stem Cells and Cancer Cells (PS3-18)
- Christian Maercker: The role of mesenchymal stem cells as potential inducers of tumor invasion and metastasis (PS3-19)
- Marija Plodinec: Nanomechanics as a Universal Hallmark of Cancer with Correlations to Metastasis (S10-05)
- M. Gordian Adam: SYNJ2BP is a novel modulator of DLL4-Notch signaling during angiogenesis (GS-57)
- Christoph Schaub: Org-1 is required for the diversification of circular visceral muscle founder cells and normal midgut morphogenesis (GS-58)
- 14:00**                                **Opening and Plenary Session PS1**
- 14:00 – 17:00**                    **Plenary Session PS1: Cell Polarity**  
Chair: Jiri Friml (Gent, Belgium)
- 14:00 – 14:30                    Jiri Friml (Gent, Belgium): Auxin – Connecting Cell Polarity and Patterning in Plants
- 14:30 – 15:00                    Carl-Philipp Heisenberg (Klosterneuburg, Austria): Cell and tissue mechanics in zebrafish gastrulation

15:00 – 15:30	Erez Raz (Münster): Motility and directed migration of primordial germ cells in zebrafish
15:30 – 16:00	Coffee Break
16:00 – 16:30	Jochen Rink (Dresden): Cell and organismal polarity during planarian regeneration
16:30 – 17:00	Marja Timmermans (Cold Spring Harbor, USA): Small RNA and lipid signals that flatten the leaf
<b>17:00 – 18:00</b>	<b>DGZ Awards</b>
17:00 – 17:20	Walther Flemming Medal Aurelio Teleman (Heidelberg): Regulation of cell proliferation by PI3K
17:20 – 17:40	Binder Innovation Prize Stephan Grill (Dresden): Cell Polarity: Mechanochemical Patterning
17:40 – 18:00	Werner Risau Prize Rui Benedito (Madrid, Spain): Notch-dependent VEGFR3 upregulation enables angiogenesis without VEGF–VEGFR2 signalling
<b>18:00 – 19:00</b>	<b>Carl Zeiss Lecture</b>
	Robert A. Weinberg (Cambridge, USA): Malignant Progression and the Epithelial-Mesenchymal Transition
<b>19:00</b>	<b>Welcome Reception – Posters for Display</b>

**Thursday, March 21, 2013**

<b>09:00 – 12:00</b>	<b>Symposia 1 – 4</b>
<b>09:00 – 12:00</b>	<b>Symposium S1: The Nuclear Envelope: Barrier &amp; Transport Functions</b> Chair: Jörg Großhans (Göttingen)
09:00 – 09:30	Jörg Großhans (Göttingen): Nuclear morphology in development and ageing
09:30 – 10:00	Amnon Harel (Safed, Israel): Nuclear Pore Complexes: A View from the Top
10:00 – 10:15	Bastian Hülsmann: Engineered nuclear pore complexes unveil how FG domains form a functional permeability barrier (short talk)
10:15 – 10:45	Coffee Break
10:45 – 11:15	Ralph Kehlenbach (Göttingen): Nucleoporins as regulators of specific transport pathways
11:15 – 11:45	Ulrike Kutay (Zürich, Switzerland): LINCing Complex Functions at the Nuclear Envelope
11:45 – 12:00	Sascha Neumann: Mutations in LMNA modulate the interaction to Nesprin-2 and cause LINC complex alterations (short talk)

**09:00 – 12:00**

**Symposium S2: Non-coding RNA in Development and Disease**

Chair: Sven Diederichs (Heidelberg)

09:00 – 09:30

Sven Diederichs (Heidelberg): Long non-coding RNA in Cancer

09:30 – 10:00

Judy Lieberman (Boston, USA): Capture of miRNA-bound mRNAs identifies oncomir networks

10:00 – 10:15

Ulrich Technau: Slicing of developmentally regulated miRNA targets in cnidarians (short talk)

10:15 – 10:45

Coffee Break

10:45 – 11:15

Maite Huarte (Pamplona, Spain): LncRNAs: essential components of the p53 network

11:15 – 11:45

Stefan Hüttelmaier (Halle): IGF2BP1 - A post-transcriptional 'driver' of tumor cell migration

11:45 – 12:00

Bernhard Herrmann: The tissue-specific lncRNA Fendrr is an essential regulator of heart and body wall development in the mouse (short talk)

**09:00 – 12:00**

**Symposium S3: Ubiquitin-related Proteins**

Chair: Frauke Melchior (Heidelberg)

09:00 – 09:30

Frauke Melchior (Heidelberg): SCF<sup>Fbxw5</sup> mediates transient degradation of actin remodeler Eps8 to allow proper mitotic progression

09:30 – 10:00

Madelon M. Maurice (Utrecht, The Netherlands): The tumour suppressor RNF43 is a stem-cell E3 ubiquitin ligase that induces endocytosis of Wnt receptors

10:00 – 10:15

Mafalda Escobar-Henriques: Mitochondrial fusion is regulated by ubiquitylation of mitofusin (short talk)

10:15 – 10:45

Coffee Break

10:45 – 11:15

Stefan Jentsch (Martinsried): Relevance of Substrate-Selective and Protein Group SUMOylation for Nuclear Activities

11:15 – 11:45

Richard D. Vierstra (Madison, USA): Dissecting the Essential Role for SUMOylation in Stress Protection

11:45 – 12:00

Jörg Schweiggert: Ubiquitylation of Kar9 and its role in spindle positioning in *Saccharomyces cerevisiae* (short talk)

**09:00 – 12:00**

**Symposium S4: Epigenetics**

Chair: Sylvia Erhardt (Heidelberg)

09:00 – 09:30

Sylvia Erhardt (Heidelberg): Destabilized cenH3 reveals separate pathways for centromeric and ectopic loading

09:30 – 10:00

Sandra B. Hake (München): Histone variants: function, deposition mechanisms and disease connection

10:00 – 10:15

Vladimir Teif: Nucleosome re-arrangement as a feedback mechanism between DNA methylation and transcription factor binding (short talk)

10:15 – 10:45

Coffee Break

10:45 – 11:15	M. Cristina Cardoso (Darmstadt): Regulation of MeCP2 induced heterochromatin remodeling
11:15 – 11:30	Claudia Nelkenbrecher: SPOC1 - a Novel Factor in Meiotic Sex Chromosome Inactivation (MSCI) (short talk)
11:30 – 12:00	Dirk Schübeler (Basel, Switzerland): Instructing the epigenome in stem and differentiated cells
<b>12:00</b>	<b>Lunch</b>
<b>12:00 – 13:00</b>	<b>Lunch Symposium 1</b>
	Carl Zeiss Microscopy GmbH: Light Sheet Fluorescence Microscopy
	Dr. Olaf Selchow (Carl Zeiss Microscopy GmbH): Light Sheet Fluorescence Microscopy and Sample preparation
<b>12:30 – 13:30</b>	<b>DGZ Member Meeting</b>
<b>13:30 – 16:30</b>	<b>Symposia 5 – 8</b>
<b>13:30 – 16:30</b>	<b>Symposium S5: Centrosomes</b>
	Chairs: Ralph Gräf (Potsdam) and Oliver Gruss (Heidelberg)
13:30 – 14:00	Oliver Gruss (Heidelberg): Mitotic Function of Centriolar Satellites
14:00 – 14:30	Andrew Fry (Leicester, UK): Regulation of Mitotic Spindle Formation by the NEK Family of Protein Kinases
14:30 – 14:45	Oliver Kuhnert: Functional characterization of CP55 and CP148 domains in respect to their subcellular localization and ability to rescue knockout/RNAi phenotypes in Dictyostelium (short talk)
14:45 – 15:15	Coffee Break
15:15 – 15:45	Monica Bettencourt Dias (Oeiras, Portugal): Centrosome Number Control: right time, right place and only once
15:45 – 16:15	Ingrid Hoffmann (Heidelberg): Regulation of centriole duplication in normal and malignant cells
16:15 – 16:30	Sophia Schade: LGALS3BP is implicated in centrosome biogenesis and aberration in cancer cells (short talk)
<b>13:30 – 16:30</b>	<b>Symposium S6: Cell Metabolism</b>
	Chair: Eckhard Lammert (Düsseldorf)
13:30 – 14:00	William Martin (Düsseldorf): Mitochondria and the energetics of genome complexity
14:00 – 14:30	Nils-Göran Larsson (Köln): How is the mammalian mtDNA packaged into mitochondrial nucleoids?
14:30 – 14:45	Joachim Füllekrug: Differentially localized acyl-CoA synthetase 4 isoenzymes mediate the metabolic channeling of fatty acids towards phosphatidylinositol

(short talk)

- 14:45 – 15:15 Coffee Break
- 15:15 – 15:45 Pierre Maechler (Geneva, Switzerland): Metabolic signaling in pancreatic  $\beta$ -cells, a role for glutamate
- 15:45 – 16:15 Eckhard Lammert (Düsseldorf): Metabolism and pathophysiology of the pancreatic beta cell
- 16:15 – 16:30 Olaf Voolstra: Phosphorylation of the *Drosophila* TRP ion channel depends on the phototransduction cascade and is regulated by calcium (short talk)

**13:30 – 16:30 Symposium S7: Vesicular Transport**

Chair: Karin Schumacher (Heidelberg)

- 13:30 – 14:00 Karin Schumacher (Heidelberg): The plant endomembrane system – same, same but different!
- 14:00 – 14:30 Anne Spang (Basel, Switzerland): CORVET and HOPS functions in *C. elegans*
- 14:30 – 14:45 Roland Dosch: Souffle/Spastizin Controls Vesicle Fusion and Fission during Zebrafish Oogenesis (short talk)
- 14:45 – 15:15 Coffee Break
- 15:15 – 15:45 Peter Robin Hiesinger (Dallas, USA): Vesicular Transport in Neuronal Maintenance
- 15:45 – 16:15 Juan Ramón Martínez Morales (Sevilla, Spain): The developmental regulator Opo antagonizes the clathrin adaptors Numb and Numbl to control integrin trafficking and retinal epithelium morphogenesis
- 16:15 – 16:30 Philipp Vick: Inhibition of Presenilin-dependent Lysosomal Function Amplifies canonical Wnt Signaling (short talk)

**13:30 – 16:30 Symposium S8: Evolution of Morphogenesis**

Chairs: Steffen Lemke (Heidelberg) and Alexis Maizel (Heidelberg)

- 13:30 – 14:00 Steffen Lemke (Heidelberg): Comparing gastrulation in the insect order Diptera
- 14:00 – 14:30 Nicolas Gompel (Marseille, France): The genetics of emergence and diversification of a pigmentation pattern in *Drosophila*
- 14:30 – 14:45 Michalis Averof: Axial patterning, regeneration and evolution: opportunities offered by new model arthropods (short talk)
- 14:45 – 15:15 Coffee Break
- 15:15 – 15:45 Patrick Lemaire (Montpellier, France): How to make morphologically similar embryos with divergent genomes?
- 15:45 – 16:15 Miltos Tsiantis (Oxford, UK): Towards understanding leaf development and diversity
- 16:15 – 16:30 Soeren Lienkamp: Vertebrate kidney tubules elongate using a planar cell polarity-dependent, rosette-based mechanism of convergent extension (short talk)

- 16:30 – 17:00**                      **Coffee Break**
- 17:00 – 18:00**                      **Distinguished Lecturer**  
 Maria Leptin (Heidelberg): The formation of a subcellular tubular membrane organelle in *Drosophila*
- 18:00 – 21:00**                      **Poster Session 1**  
 Posters S1 – S8 and PS1 on display

**Friday, March 22, 2013**

- 09:00 – 12:00**                      **Symposia 9 – 13**
- 09:00 – 12:00**                      **Symposium S9: Primary Cilia & Signaling**  
 Chair: Achim Gossler (Hannover)
- 09:00 – 09:30                      Gislene Pereira (Heidelberg): Regulation of initial steps of ciliogenesis
- 09:30 – 09:45                      Susann Schüler: Syndapin I and Cobl are crucial for cilia formation and function (short talk)
- 09:45 – 10:15                      Hiroshi Hamada (Osaka, Japan): Generating and sensing the fluid flow by cilia
- 10:15 – 10:45                      Coffee Break
- 10:45 – 11:00                      Leonie Alten: *Noto* and *Foxj1* differentially regulate node formation, nodal ciliogenesis and cilia positioning during murine development (short talk)
- 11:00 – 11:30                      Heiko Lickert (München): Pitchfork and Gprasp2 target Smoothed to the primary cilium for Hedgehog pathway activation
- 11:30 – 12:00                      Heymut Omran (Münster): The nexin-dynein regulatory complex subunit DRC1 is essential for motile cilia function in algae and humans
- 09:00 – 12:00**                      **Symposium S10: Biomechanics of Cells**  
 Chair: Jochen Guck (Dresden)
- 09:00 – 09:30                      Jochen Guck (Dresden): The function-specific evolution of cell and nuclear mechanics during differentiation
- 09:30 – 09:45                      Ingo Thievensen: Vinculin is required for cell polarization, migration and extracellular matrix remodeling in 3D collagen matrix (short talk)
- 09:45 – 10:15                      Franziska Lautenschläger (Paris, France): Search Strategies of Cells in Confinement
- 10:15 – 10:45                      Coffee Break
- 10:45 – 11:15                      Eric M. Darling (Providence, USA): Cellular mechanical biomarkers predict lineage preference in adult stem cells
- 11:15 – 11:30                      Katrin Rudolf: Tissue interfaces: Molecular and physical mechanisms guiding cell sorting in developing animals (short talk)
- 11:30 – 12:00                      Sirio Dupont (Padua, Italy): When the cytoskeleton talks to the nucleus: role of YAP/TAZ in mechanotransduction

09:00 – 12:00

**Symposium S11: Cortical Development**

Chair: Orly Reiner (Rehovot, Israel)

Short Introduction

09:00 – 09:30

Wieland B. Huttner (Dresden): Neural stem and progenitor cells, extracellular matrix niches, and the evolution of the cerebral cortex

09:30 – 10:00

Joseph LoTurco (Storrs, USA): Self-Renewal of Neocortical Neuronal Progenitors Requires Epigenetic Regulation by Citron Kinase

10:00 – 10:15

Elena Taverna: Repositioning of the centrosome and Golgi complex during the transition from apical to basal progenitors in the mouse embryonic neocortex (short talk)

10:15 – 10:45

Coffee Break

10:45 – 11:00

Bhavin Shah: Dissecting the regulation of Rap1 GTPases during neuronal polarisation (short talk)

11:00 – 11:30

Orly Reiner (Rehovot, Israel): Novel non-cell autonomous factors involved in regulation of radial neuronal migration

11:30 – 12:00

Michael Frotscher (Hamburg): Directed migration of cortical neurons requires Reelin-induced cofilin phosphorylation of the leading process

09:00 – 12:00

**Symposium S12: Advanced Microscopic Methods**

Chair: Paul Walther (Ulm)

09:00 – 09:30

Paul Walther (Ulm): Is the scanning mode the future of electron microscopy in biology?

09:30 – 10:00

Ernst H.K. Stelzer (Frankfurt): High resolution deep imaging of live cellular spheroids with light sheet-based fluorescence microscopy

10:00 – 10:15

Udo Birk: In-Vivo Optical Projection Tomography (short talk)

10:15 – 10:45

Coffee Break

10:45 – 11:00

Christoph Cremer: Spectral Precision Distance Microscopy (SPDM) of membrane receptor clusters in influenza virus infected human epithelial cells (short talk)

11:00 – 11:30

Shigeki Watanabe (Salt Lake City, USA): Correlative microscopy: visualizing endocytic intermediates and proteins in electron micrographs

11:30 – 12:00

Sonja Welsch (Eindhoven, The Netherlands): Using electron microscopy and correlated microscopy to study virus infections  
Bonus track: iCorr, a novel, integrated solution for correlated microscopy

09:00 – 12:00

**Symposium S13: Lateral Gene Transfer & Evolution of Symbiosis**

Chair: Thomas Bosch (Kiel)

09:00 – 09:15

General Introduction

09:15 – 09:45

Thomas Bosch (Kiel): Symbiotic interactions in Hydra

09:45 – 10:15

Angela E. Douglas (Ithaca, USA): Evolutionary Novelty in Symbiosis by

Compensation for Gene Loss

10:15 – 10:45

Coffee Break

10:45 – 11:15

Giles Oldroyd (Norwich, UK): Engineering nitrogen fixation in cereals

11:15 – 11:45

Tal Dagan (Düsseldorf): Phylogenomic networks reveal trends and barriers to lateral gene transfer during microbial evolution

11:45 – 12:00

Juris Grasis: Studying the *Hydra* Virome to Understand an Ancestral Holobiont (short talk)

**12:00**

**Lunch**

**12:00 – 13:00**

**Lunch Symposium 2**

ibidi GmbH: Functional Cell-Based Assays – From Experimental Design to Data Analysis

Armin Bieser (ibidi GmbH, München): Introduction into ibidi's functional cell-based assays

Loïc Dupré (INSERM, Toulouse): Attraction *versus* repulsion: what drives chemotactic decision in leukemic cells?

**12:00 – 15:00**

**Poster Session 2**

Posters S9 – S13, PS2, PS3 and GS on display

**12:30 – 13:30**

**GfE Member Meeting**

**15:00 – 18:00**

**Plenary Session PS2: The Nucleus and the Genome**

Chair: Peter Lichter (Heidelberg)

15:00 – 15:30

Peter Lichter (Heidelberg): Implications of Cancer Genome Sequencing for Understanding Genome Biology

15:30 – 16:00

Bas van Steensel (Amsterdam, The Netherlands): Single-cell dynamics of genome - nuclear lamina interactions

16:00 – 16:30

Andrew Belmont (Urbana, USA): Long-range, directed movement of Hsp70 transgenes towards nuclear speckles accompanied by chromatin stretching after transcriptional activation

16:30 – 17:00

Coffee Break

17:00 – 17:30

Ana Pombo (London, UK): Modelling large-scale organization of chromatin: a tale of the HoxB locus organization in mouse ES cells

17:30 – 18:00

Karsten Rippe (Heidelberg): PML initiates alternative lengthening of telomeres by inducing DNA damage response via TRF2 depletion

**18:00 – 18:30**

**Nikon Young Scientist Awards of the German Society for Cell Biology**

Dennis Breitsprecher (Waltham, USA): Single molecule reconstitution of actin regulatory mechanisms



Fabian Erdel (Heidelberg): Need for speed: Tracing chromatin remodelers in search of the right nucleosome

**18:30 – 19:00**

**PhD Student Awards of the Society for Developmental Biology**

Anna-Marei Böhm (Kiel): Investigation of stem cell regulation in basal metazoan *Hydra*

Dominique Förster (Zürich, Switzerland): Systematic Analysis of Cell Behaviour in Epithelial Tube Expansion

**19:00 – 19:45**

**Frontiers in Science Lecture**

Reinhard Jahn (Göttingen): Exocytosis in neurons – interplay between proteins and lipids

**20:30**

**Get Together**

**Saturday, March 23, 2013**

**08:30 – 09:30**

**Matthias Schleiden Lecture**

Thomas Cremer (Martinsried): Nuclear architecture and function studied in space and time: origins, current state and perspectives

**09:30 – 12:30**

**The Open Symposium: Quantitative Biology – Where do we stand?**

Chair: Harald Herrmann (Heidelberg)

09:30 – 10:00

Josef Käs (Leipzig): The Physical Bounds of *In Vivo* Cell Motility

10:00 – 10:30

Roland Eils (Heidelberg): To Die or Not To Die: Systems Biology of Cell Death Mechanisms

10:30 – 11:00

Ueli Aebi (Basel, Switzerland): Imaging and measuring protein complexes and assemblies by scanning transmission electron microscopy (STEM)

11:00 – 11:30

Coffee Break

11:30 – 12:00

Yitzhak Rabin (Ramat-Gan, Israel): Understanding the Structure-Function Relation of Nuclear Pores

12:00 – 12:30

Jochen Wittbrodt (Heidelberg): Quantitative Analysis of Embryogenesis: Genetics and long term imaging of organs and organisms

**09:30 – 12:30**

**Plenary Session PS3: Stem Cells**

Chair: Andreas Trumpp (Heidelberg)

09:30 – 10:00

Timm Schröder (Munich): Long-term single cell quantification: New tools for old questions in stem cell research

10:00 – 10:30

Marieke Essers (Heidelberg): Stress induced activation of HSCs

10:30 – 11:00

Bruce Edgar (Heidelberg): Intestinal stem cell control in the healthy and hyperplastic *Drosophila* gut

11:00 – 11:30

Coffee Break

11:30 – 12:00

Oliver Brüstle (Bonn): Programming neural cells for disease modeling

12:00 – 12:30

Andreas Trumpp (Heidelberg): Circulating Metastasis-initiating Cells in Breast Cancer

**12:30**

**Closing Ceremony**