

# Molecular Basis of Life 2017

Ruhr University Bochum [September 24 - 27, 2017]



## Concerned about CRISPR off-target effects?

Achieve footprint-free gene editing via efficient delivery of Cas9/sgRNA ribonucleoprotein (RNP) complexes

Persistent and elevated expression of Cas9 in target cells may lead to off-target effects. In contrast, when delivering Cas9/sgRNA RNP complexes, the short residence time of the Cas9 protein will greatly increase the specificity of gene editing. Electroporation of our **Guide-it™ Recombinant Cas9** is a simple method to achieve footprint-free editing. Alternatively, you may deliver RNP complexes via novel gesicle technology. Our **Guide-it™ CRISPR/Cas9 Gesicle Production**System is designed to generate cell-derived nanovesicles, loaded with Cas9/sgRNA RNP complexes against the target of your choice.

More details at www.takarabio.com/guide-it

#### MEET US AT BOOTH #5

Come to our talk to learn more about Takara Bio's Gene Editing solutions:

"Footprint-free gene editing using CRISPR/Cas9 ribonucleoprotein (RNP) delivery and long ssDNA donor templates"

Presented by **Cornelia Hampe, PhD**Product Manager – Scientific Support Specialist
Takara Bio Europe



Room: Lecture Hall 1



Tuesday, Sept. 26 12:30 - 13:30







#### Molecular Basis of Life 2017

International Fall Meeting of the Gesellschaft für Biochemie und Molekularbiologie (German Society for Biochemistry and Molecular Biology)

> September 24 - 27, 2017 Ruhr University Bochum



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#### Welcome Note

Dear friends and colleagues,

It is our great pleasure to welcome you on behalf of the German Society for Biochemistry and Molecular Biology (GBM) to our international conference at the Ruhr University Bochum.

With this congress, we bring together a wide range of researchers from Germany and from across the globe to explore 'The Molecular Basis of Life'. The congress will cover the entire spectrum of molecular biosciences. In addition, there will be lunch sessions on research in the bioscience industry, spectroscopic methods and biomarkers, publishing and peer-review, Perspectives towards the magnetic control of the nervous system as well as sessions organized by the junior GBM. We will also have a public panel discussion on ethics, focusing on the impact of the new CRISPR/Cas9 technique on future development of life.

We would also like to draw your attention to the young scientists that will present their work as posters or as oral presentations. This is a great opportunity to meet the upcoming new generation of promising young researchers!

In each of the parallel sessions we will have two presentations selected from the abstracts. Moreover, we will have the "Pecha Kucha" format on Monday, with numerous speed talks also selected from the abstracts.

The poster sessions, scheduled on Sunday, Monday and Tuesday, offer dynamic, vivid and personal presentations allowing to forge new collaborations and to discover new fields and ideas.

Finally, we wish to draw your attention to the industry exhibition in the foyer of the main lecture hall (Audimax). Major companies from the bioscience field will present their products and services. We thank all our donors and sponsors, whose contributions have greatly helped in shaping this event.

We trust that the Congress will offer ample opportunities for fruitful discussions, as well as the possibility to initiate new collaborations and joint projects.

We wish all participants, speakers and presenters an enjoyable and productive conference!

Rolf Heumann (Scientific Organizer)

Johannes Herrmann (President of the GBM)

#### 15:00 - 15:15 Conference opening Audimax Rolf Heumann (Conference Organizer) - Johannes Herrmann (President of the GBM) - Nils Metzler-Nolte (Dean of the Faculty of Chemistry and Biochemistry of the Ruhr University Bochum) 15:15 - 15:30 Organ play **Audimax** Ingmar Stiller (Folkwang University of the Arts) Fantasia and Fugue in G minor (Johann Sebastian Bach) 15:30 - 16:30 Public Lecture (Chair: Stefan Herlitze) **Audimax** Gero Miesenböck /Oxford [UK] Die Erleuchtung des Gehirns (in German language) Gero Miesenböck referiert über die Optogenetik welche die Gentechnik mit Methoden der Optik kombiniert, um das Verhalten bestimmter Nervenzellen im Gehirn sichtbar und steuerbar zu machen. Break 16:30 - 16:45 Organ play 16:45 - 17:00 **Audimax** Ingmar Stiller (Folkwang University of the Arts) Finale from Symphony No. 2 (Charles-Marie Widor) Karl Lohmann Prize (Chair: Johannes Herrmann) 17:00 - 17:30 **Audimax** Tvcho Mevissen /Boston [US]

Tycho Mevissen receives this years' Karl Lohmann PhD award for his outstanding work in the context of his PhD thesis.

## Sunday, Sept. 24

17:30 - 18:00

GBM PhD Award (Chair: Johannes Herrmann) Katharina Höfer / Heidelberg [DE] Suprises in RNA biology - A new role for an old coenzyme

**Audimax** 

This year the GBM PhD Award goes to Katharina Höfer for her excellent PhD thesis.

18:00 - 19:15

19:15- 22:00

Otto Warburg Medal (sponsored by Elsevier/BBA Chair: Johannes Herrmann) in memoriam Stefan Jentsch / Munich [DE]

**Audimax** 

The German Society for Biochemistry and Molecular Biology (GBM) awards the Otto Warburg Medal posthumously to Stefan Jentsch, former director of the department "Molecular Cell Biology" at the Max

Planck Institute for Biochemistry in Martinsried, for his research on the protein Ubiquitin and its role in protein degradation.

The memorial address will be delivered by his former coworkers

Thorsten Hoppe /Cologne [DE] Michael Rape /Berkeley [USA] Thomas Sommer /Berlin [DE]

sponsored by

Specificity in the ubiquitin system: molecular mechanisms and applications of OTU family deubiquitinases

Get together / Poster discussion (with Pretzels & Beer)

**Audimax** 

19:30 - 20:30 even poster numbers 20:30 - 21:30

Together with MAGNEURON and VBIO-NRW, GBM will award five poster prizes (300 Euro each prize) on the last day of the conference.

08:45 - 09:00	Welcome address by  Axel Schölmerich  (Rector of the Ruhr University Bochum)	Audimax
	( The state of the	
09:00 - 09:45	Plenary Lecture (Chair: Rolf Heumann)  Pietro De Camilli /Yale [USA]  Crosstalk between intracellular membranes at contact sites not leading to fusion	Audimax
09:45 - 10:30	FEBS National Lecture (Chair: Ralf Erdmann)  Maya Schuldiner /Rehovot [IL]  You take the high road and I take the low road - Uncovering new routes for secretory pathway translocation	Audimax
	With the FEBS National Lecture the	
	Federation of European Biochemical Societies honors a distinguished scientist with a significant international reputation for fundamental contributions to the fields of biochemistry and molecular biology.	FEBS
10:30 - 11:00	Federation of European Biochemical Societies honors a distinguished scientist with a significant international reputation for fundamental contributions to the fields of biochemistry and	
10:30 - 11:00 11:00 - 11:45	Federation of European Biochemical Societies honors a distinguished scientist with a significant international reputation for fundamental contributions to the fields of biochemistry and molecular biology.	
11:00 - 11:45	Federation of European Biochemical Societies honors a distinguished scientist with a significant international reputation for fundamental contributions to the fields of biochemistry and molecular biology.  Coffee break  Plenary Lecture (Chair: Konstanze Winklhofer) Linda Partridge /Cologne [DE]	Audimax
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11:00 - 11:45	Federation of European Biochemical Societies honors a distinguished scientist with a significant international reputation for fundamental contributions to the fields of biochemistry and molecular biology.  Coffee break  Plenary Lecture (Chair: Konstanze Winklhofer) Linda Partridge /Cologne [DE] Eating to live  Plenary Lecture (Chair: Stefan Raunser) Andrew Carter /Cambridge [UK] Transporting cargo over long distances: insights from	Audimax

## Monday, Sept. 25

12:30 - 13:30

Meet the Prof 1 (Chair: Henning Jacobsen)
Guest: Maya Schuldiner /Rehevot [IL]

Hall 4

(for students only, organized by the Junior GBM)

In an informal atmosphere you will get the chance to ask the questions which keep you up at night - e.g. how do I make a career in science? Did the speaker have fun on his/her scientific path and which experiences were decisive? You are welcome to join and ask further questions (a registration is required).

12:40 - 15:00

Lunch Session (LS 1A, Chairs: Maxime Dohan/ Hendrik Schöneborn)

Perspectives towards the magnetic control of the nervous system

Hall 2a

Manipulating cell signaling pathways with magnetic nanoactuators is an emerging method for patient-derived cell therapies of neurodegenerative disorders. While curative pharmacological treatments are not in sight, this new research field is considered very promising to reestablish neuronal circuits in a pathologically affected brain using functionalized magnetic nanoparticles. Especially, this symposium addresses the topic of magnetogenetics, which is an alternative approach arising to the field of optogenetics.

12:40 - 13:10	Maxime Dahan /Paris [FR] Magnetic control of intracellular dynamics
13:10 - 13:20	Emilie Secret /Paris [FR]  Design and bio-functionalization of magnetic nanoparticles for intra-cellular remote control of signaling pathways
13:20 - 13:50	Arnd Pralle /Buffalo [US] Remote magnetothermal deep-brain neuromo dulation in freely behaving animals

Vittoria Raffa /Pisa [IT]

Mechanotransduction of axonal growth: effect of

14:20 - 14:30 Selina van der Meer /Essen [DE]
 Attachment of protein-targeting molecules to the surface of ultrasmall gold nanoparticles (2 nm) by click chemistry
 14:30 - 15:00 Olivia Masseck /Bochum [DE]
 Illuminating the serotonergic system Modulation of GPCR signaling by light

13:30 - 15:00

Lunch Session (LS 1B, Chairs: Janosch Hennig, Kersten Raabe) Publishing and Peer-review – a discussion Hall 1

Editors from different scientific journals as well as other experts from the publishing field will present different views and insights in the publishing process and in future developments:

- Insights from journals'/publishing platform representatives into their approach in scientific publishing, what matters to ge published
- Discuss the critical issue of how to assess impact & novelty in publishing: entry ticket or pitfall?
- Discuss alternative review processes realized by different journals: open review documents, double blind review processes
- Editor's role in the review process
- The future in publishing and alternative formats in publishing: open access journals, arXives and new formats, the cost of publishing

#### Guests.

Karin Dumstrei, EMBO Journal

Andrea Hoogenkamp-O'Brien, Elsevier/BBA

Lawrence Rajendran, founder of Science matters

Anke Sparmann, Nature

## Monday, Sept. 25

13:30 - 15:00

Lunch Session (LS 1C, Chair: Klaudia Giehl) Industry meets Academia

Hall 2b

Researchers from leading companies in the bioscience field will present their latest findings on different research topics.

Peter Sandner (Bayer AG)

From molecules to patients: Research on soluble guanylate cyclase (sGC) stimulators @ Bayer

**Linn Schneider** (Bayer AG)

What you see is what you get – advancing high throughput scree ning by Light

Michael Schraeml (Roche Diagnostics GmbH)
SlyD as a versatile scaffold platform technology

13:30 - 15:00

Lunch Session (LS 1D, Moderation: Kathrin Zinkant) **Public ethic discussion (in German)**"Schöne neue Gen-Welt: Fluch oder Segen für die

Hall 3

Gäste

Steffen Augsberg

Zukunft der Menschheit"

(Professor für öffentliches Recht, Universität Gießen, Mitglied des deutschen Ethikrats)

Hille Haker

(Professorin für Ethik an der Loyola University, Chicago)

Lennart Randau

(Max-Planck-Institut for Terrestrial Microbiology, Marburg)

**Kathrin Zinkant** 

Redakteurin der Süddeutschen Zeitung)

			I
15:00 - 17:00	Parallel Session (PS 1A, Chairs: Hanns Ulrich Zeilhofer/Carmen Villmann) Pain  Hall 1	15:50 - 16:00	Short talk: Robert Ernst /Homburg [DE] Crosstalk of lipids and protein folding stress: stressed ER
15:00 - 15:30	Camilla Svensson /Stockholm [SE] Novel roles of autoantibodies in arthritis-induced pain	16:00 - 16:10	Short talk: <b>Daniel Schwerter</b> /Bochum [DE]
15:30 - 15:50	Petra Schweinhardt /Montreal [CA] Pain from the human perspective		Insight into receptor targeting by the peroxise Pex1p/Pex6p of the yeast Saccharomyces cer
15:50 - 16:00	Short talk: Volker Eulenburg /Erlangen [DE]	16:10 - 16:30	Ioannis Manolaridis /Zürich [CH] Structural studies of human ABC transporter
	Inhibition of glycine transporter 1 as a novel approach for the treatment of chronic pain conditions	16:30 - 17:00	<b>Thorsten Hugel</b> /Freiburg [DE]  Dynamic interactions of proteins quantified by
16:00 - 16:10	Short talk:  Hans-Georg Breitinger /New Kairo [ET]  Glucose – a potentiator of neuronal glycine receptors and possible		FRET
16:10 - 16:30	modulator of nociceptive signaling  Alesia Tietze /Darmstadt [DE]	15:00 - 17:00	Parallel Session (PS 1C, Chair: Carola Hunte) Electron Transport Chains
10.10 - 10.30	Employing neurotoxins as potent tools for personalized pain treatment	15:00 - 15:30	Petra Fromme /Tempe AZ [US] Title to be announced
16:30 - 17:00	Hanns Ulrich Zeilhofer /Zürich [CH] Restoring the spinal pain gate: Subtype-specific GABA-A receptor ligands against chronic pain	15:30 - 15:50	Markus Schwarzländer /Bonn [DE] How to stay flexible: Respiratory physiology i
	Subtype-specific GABA-A receptor ligarius against chronic pain	15:50 - 16:00	Short talk: <b>Wei-Chun Kao</b> /Freiburg [DE]
15:00 - 17:00	Parallel Session (PS 1B, Chair: Sebastian Hiller)  Cell Signalling & Membrane Trafficking  Hall 2a		The obligate respiratory supercomplex from Corynebacterium glutamicum
15:00 - 15:30	Franz Hagn /Garching [DE] Phospholipid nanodiscs as a tool to study the structure and function of membrane proteins in a native environment	16:00 - 16:10	Short talk: Ingrid Span /Düsseldorf [DE] Artificial cobalt-sulfur proteins as redox bioco
15:30 - 15:50	Patrick Scheerer /Berlin [DE] Structural elucidation of the G-protein coupled receptor allosteric machine	16:10 - 16:30	<b>Bruce Morgan</b> /Kaiserslautern [DE] Identification and characterization of novel in glutathione transporters
		16:30 - 17:00	José Antonio Enríquez Domínguez /Madrid

Monday, Sept. 25

ss: Lipid fingerprints of a

kisomal AAA+ complex rerevisiae

d by single molecule

Hall 3

13

y in plant cells

m the actinobacterium

ocatalysts

! intracellular

José Antonio Enríquez Domínguez / Madrid [ES] Super-assembly of respiratory complexes

I	Schedule		Monday, Sept. 25
15:00 - 17:00	Parallel Session (PS 1C, Chair: Christian Hammann)  RNA Regulation & Transport  Hall 2b	17:50 - 18:00	Miriam Kutsch /Bochum [DE] Molecular insights into the networking of human guanylate binding proteins
15:00 - 15:30	Michael Kiebler /Martinsried [DE] The role of the RNA-binding protein Staufen2 in dendritic mRNA localization and memory	18:00 - 18:10	Dennis Quentin /Dortmund [DE] Structural studies of a toxin loaded Type VI secretion (T6S) effector complex using electron microscopy
15:30 - 15:50	Florence Besse /Nice [FR] Regulating neuronal granules in space and time	18:10 - 18:20	David Gnutt /Bochum [DE] Intracellular modulation of protein folding stability probed by a
15:50 - 16:00	Short talk:  Jan Medenbach /Regensburg [DE]  Drosophila Sister of Sex-lethal antagonizes Sxl-lethal-dependent splicing to maintain a male-specific gene expression pattern		Three parallel Pecha Kucha sessions: Speed short talks - each talk takes only four minutes.
16:00 - 16:10	Short talk:  Markus T. Bohnsack /Göttingen [DE]  METTL16 is a N6-methyladenosine (m6A) methyltransferase that targets a conserved region of the U6 snRNA required for pre-mRNA	17:30 - 18:35	The best talks of the three sessions will be awarded on the last conference day: NIKON sponsored three cameras (Coolpix W100).  Pecha Kucha: Protein Structure and Function  Hall 2a
16:10 - 16:30	Splicing  Benedikt Beckmann / Berlin [DE]		(Chair: Andreas Reiner)
16:30 - 17:00	Novel Methods to Investigate RNA-Protein Interactions  Stefanie Dimmeler /Frankfurt [DE] IncRNAs in cardiovascular biology: from function to mechanism	17:30 - 17:34	Sara Abad Herrera /Bochum [DE] Purification and characterisation of the yeast plasma membrane ATP binding cassette transporter Pdr11p
17:00 - 17:30	Coffee break  Audimax	17:35 - 17:39	Andreas Baumruck / Darmstadt [DE] Synthesis, purification and characterization of membrane proteins using in situ-cleavable solubilizing tail
17:30 - 18:30	Mixed Topic Session (Chair: Thomas Günther-Pomorski)  Hall 1	17:40 - 17:44	Franziska Leidreiter /Dortmund [DE] Structural insights into different Tc toxins of human and insect pathogenic bacteria
17:30 - 17:40	Haike Antelmann /Berlin [DE]  Protein S-bacillithiolation functions in thiol-protection and redox regulation of the glyceraldehyde-3-phosphate dehydrogenase Gap in Staphylococcus aureus under hypochlorite stress	17:45 - 17:49	Matthias Massarczyk /Bochum [DE] Local mode analysis: decoding IR spectra by visualizing molecular details
17:40 - 17:50	Raphael Böhm /Basel [CH] Gating mechanism of the mitochondrial voltage-dependent anion channel	17:50 - 17:54	Florian Mayerthaler /Münster [DE] FRET monitoring of conformational changes in a nonribosomal peptide synthetase

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I	Schedule		Monday, Sept. 25
17:55 - 17:59	Vishnupriya Pandey /Freiburg [DE] Structural and functional characterization of the interaction of yeast cytochrome bc1 with cytochrome c	17:45 - 17:49	Hassan Bukhari /Bochum [DE] Intracellular signaling and dynamics of Alzheimer's disease relevant nuclear spheres
18:00 - 18:04	Sabrina Pospich /Dortmund [DE] Near-atomic structure of jasplakinolide-stabilized malaria parasite F-actin reveals the structural basis of filament instability	17:50 - 17:54	Fabian den Brave /Martinsried [DE] Function of SUMO in response to proteotoxic stress
18:05 - 18:09	Johannes Sommerkamp /Bochum [DE] Crystallographic and biochemical studies reveal insight into phycoerythrobilin biosynthesis	17:55 - 17:59	Mathias Girbig /Cambridge [UK] Recombinant production and mutagenesis of the 23-subunit dynactin complex
18:10 - 18:14	Stefan Tennigkeit /Bochum [DE] Biophysical Investigations on microbial rhodopsins using theoretical methods	18:00 - 18:04	Semra Ince /Bochum [DE] The C-terminus of the human guanylate-binding protein 1 regulates its unique GTPase activity
18:15 - 18:19	Lukas Verhuelsdonk /Bochum [DE] Recombinant expression of murine DNase1-like 2 in Pichia pastoris	18:05 - 18:09	Stefanie Mosel /Essen [DE] A novel role for the anti-apoptotic protein Survivin in DNA repair and replication
18:20 - 18:24	Katja Koßmann /Karlsruhe [DE] HOBbing proteins with DNA	18:10 - 18:14	Sebastian Neumann /Bochum [DE] Ha-Ras mediated neuroprotection – involvement of plasma membrane localized Voltage-dependent anion channel 1 (VDAC-1)?
18:25 - 18:29	Elisa-Charlott Schöneweiß /Essen [DE] The collective behavior of spring-like motifs tethered to a DNA origami nanostructure	18:15 - 18:19	Elisabeth Schröder /Essen [DE] TFIIA transcriptional activity is controlled by a "cleave-and-run" Exportin-1/Taspase 1-switch
17:30 - 18:30	Pecha Kucha: Cellular Signalling  (Chair: Shirley Knauer)  Hall 2b	18:20 - 18:24	Philipp Wolf /Leipzig [DE] Post-translational labeling of cardiovascular receptors to investigate receptor dimerization
17:30 - 17:34	Leonie Amstein /Frankfurt [DE] In silico modeling of signaling pathways with focus on the characterization of signal flows	17:30 - 18:30	Pecha Kucha: Subcellular Studies Hall 3
17:35 - 17:39	Lena Berlemann /Bochum [DE] A mitophagy-independent neuroprotective activity of the mito- chondrial kinase PINK1	17:30 - 17:34	(Chair: Ralf Erdmann)  Alexander Bird /Dortmund [DE]  A new mechanism for clathrin stabilization of microtubules via
17:40 - 17:44	Christine Blattner /Karlsruhe [DE] Fam83F is a novel regulator of p53	17:35 - 17:39	adaptor-like interactions on the mitotic spindle  Britta Eggers /Bochum [DE]  Proteomic characterization of murine muscle fiber types via laser-

microdissection and LC MS/MS mass spectrometry

#### 17:40 - 17:44 Philippe Fuchs /Bonn [DE] Re-modelling plant mitochondrial respiration during drought 17:45 - 17:49 Astrid Gesper /Bochum [DE] Pitfalls of using total protein content for normalization of membrane proteins 17:50 - 17:54 Jean-Noël Grad /Essen [DE] Targeting protein-protein interactions via supramolecular ligands -Mechanistic insight by molecular modeling Christian Heid /Essen [DE] 17:55 - 17:59 Molecular tweezers for specific protein surface recognition 18:00 - 18:04 Sebastian Jung /Bochum [DE] A comparative analysis of Sec61- and SecY-mediated transport of intrinsically disordered proteins 18:05 - 18:09 Wasifa Nuriev /Lübeck [DE] Nonstructural proteins 7 / 8 of Middle-East respiratory syndrome coronavirus: Primase or RNA-dependent RNA polymerase? Dennis Paliga /Bochum [DE] 18:10 - 18:14 Toxin mediated delivery of functional Nurr1 fusion protein as promising tool for programming of dopaminergic cells 18:15 - 18:19 Elena Porcellato /Heidelberg [DE] Establishment of an in vivo and cell-specific method for the identification of palmitoyltransferase-interacting proteins in Drosophila using BioID 18:20 - 18:24 Van Loi Vu /Berlin [DE]

Real-time imaging of the bacillithiol redox potential in the human pathogen Staphylococcus aureus using a genetically encoded

bacilliredoxin-fused redox biosensor

## Monday, Sept. 25

18:45 - 19:30

Plenary Lecture (Chair: Klaus Gerwert)

Peter Hegemann /Berlin [DE]

Algal sensory photoreceptors, all biochemistry at the

**Audimax** 

19:30 - 22:00

end

Poster discussion (with Pretzels & Beer)

Audimax

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19:30 - 20:30 odd poster numbers 20:30 - 21:30 even poster numbers

Together with MAGNEURON and VBIO-NRW, GBM will award five poster prizes (300 Euro each prize) on the last day of the conference.



I	Schedule		Tuesday, Sept. 26
09:00 - 11:00	Parallel Session (PS 2A, Chair: Michael Thumm)  Age related Pathologies & Autophagy  Hall 2a	10:00 - 10:10	Short talk:  Bianca Schrul /Homburg [DE]  An unexpected liaison of lipid droplets and peroxisomes – PEX19-
09:00 - 09:30	Nektarios Tavernarakis /Heraklion [GR] Mitophagy in neurodegeneration and ageing		mediated protein targeting to lipid droplets
09:30 - 09:50	Short talk:	10:10 - 10:30	Harald Platta /Bochum [DE] Involvement of vacuolar proteins in the biogenesis of peroxisomes
	Jana Deitersen /Düsseldorf [DE] Identification of autophagy-modulating natural products and derivatives	10:30 - 11:00	Martin van der Laan /Homburg [DE] Functional Architecture of the Mitochondrial Inner Membrane
09:50- 10:00	Short talk:	09:00 - 11:00	Parallel Session (PS 2C, Chair: Rüdiger Hell) Hall 3
	Bernd Gilsbach /Tübingen [DE] Characterization of LRRK2	09.00 - 11.00	Molecular Machines in Bioenergetics
10:00 - 10:10	Short talk: Panagiotis Athanasopoulos /Groningen [NL]	09:00 - 09:30	Werner Kühlbrandt /Frankfurt [DE] CryoEM of mitochondrial membrane protein complexes
	The role of PP2A in the complex intramolecular activation of LRRK2	09:30 - 09:50	Veronica G. Maurino /Düsseldorf [DE]
10:10 - 10:30	Martin Graef /Köln [DE] Sophisticated pathways link fatty acid metabolism and autophagy		Induced production of H2O2 from chloroplasts: a bioengineering approach and its applications
10:30 - 11:00	Konstanze F. Winklhofer /Bochum [DE] Ubiquitin signaling in neurodegenerative diseases	09:50 - 10:00	Short talk:  Mathias Lübben /Bochum [DE]  Zn-ATPase: observation of hydrolysis reaction by vibrational spect-
09:00 - 11:00	Parallel Session (PS 2B, Chair: Ralf Erdmann) Hall 2b		roscopy
	Subcellular Organisation	10:00 - 10:10	Short talk:  Marc Nowaczyk /Bochum [DE]
09:00 - 09:30	David Komander /Cambridge [UK] Degrading mitochondria by mitophagy – a new ubiquitin		Application of the TwinStrep-tag/Streptactin system for purification of photosynthetic membrane protein complexes from T. elongatus
	playground	10:10 - 10:30	Guy Hanke /London [UK]
09:30 - 09:50	Vicki Gold /Exeter [UK] Mitochondrial protein import studied by cryoET		Dynamic interactions at the end of the linear electron transport chain
09:50 - 10:00	Short talk: Thomas Becker /Freiburg [DE]	10:30 - 11:00	Ulrich Brandt /Nijmegen [NL] Molecular Mechanism and Regulation of Mitochondrial Complex I
	Connection of mitochondrial protein and metabolite transport		

## Schedule / Tues., Sept. 26

Parallel Session (PS 2D, Chair: Lennart Randau) **Genome-editing & Macromolecular Structures** Stan J.J. Brouns /Wageningen [NL]

Hall 1

09:00 - 09:30

From understanding CRISPR immunity to CRISPR 2.0 applications

09:30 - 09:50

Daan Swarts /Zürich [CH]

Structural insights into CRISPR-Cas12a - a genome editing alternative to CRISPR-Cas9

09:50 - 10:00

Short talk:

Felix Müller-Planitz / München [DE]

Structure and function of the chromatin remodeling enzyme ISWI

10:00 - 10:10

Short talk:

Daniel Gleditzsch / Marburg [DE]

Structural basis of CRISPR RNA-guided DNA recognition by a minimal Type I-Fv Cascade surveillance complex

10:10 - 10:30

Arwen Pearson / Hamburg [DE]

Catching macromolecules in the act: approaches for time-resolved structural biology

10:30 - 11:00

Beat Fierz /Lausanne [CH]

Multiscale dynamics of heterochromatin revealed by single-molecule fluorescence

11:00 - 12:30

Poster discussion/Coffee break

**Audimax** 

all poster numbers (visit of the poster prize jury)

Together with MAGNEURON and VBIO-NRW, GBM will award five poster prizes (300 Euro each prize) on the last day of the confe-

12:30 - 13:30

Lunch break

**Audimax** 



## **Lead Discovery Center**

YOUR PARTNER FOR DRUG DISCOVERY IN EUROPE



12:30 - 13:30

Meet the Prof 2 (Chair: Maren Lafrentz) Guest: **Edward Lemke** /Heidelberg [DE] Hall 4

(for students only, organized by the Junior GBM)

In an informal atmosphere you will get the chance to ask the questions which keep you up at night - e.g. how do i make a career in science? Did the speaker have fun on his/her scientific path and which experiences were decisive? You are welcome to join and ask further questions. (a registration has been required)

12:30 - 13:30

Company presentation

Takara Bio Europe /Saint Germain en Laye [FR]

Hall 1

Cornelia Hampe

Footprint-free gene editing using CRISPR/ Cas9 ribonucleoprotein (RNP) delivery and long ssDNA donor templates



13:30 - 15:00

Lunch Session (LS 2A, Chair: Klaus Gerwert)

Spectroscopy & Diagnostics

Hall 2a

In the session innovative, label free imaging techniques for the characterization of tissue and the analysis of body fluids will be presented by leading scientists. Using Raman and FTIR imaging, tumor tissue can be classified. Thereby, classical H&E staining and other laborious immunohistochemical techniques for tissue staining can be complemented by an automated, label free technique. State of the art approaches for the analysis of tumor tissue will be presented as well. In addition, recent studies on the early detection of neurodegenerative diseases will be presented. For example, Alzheimer's disease can be detected at a very early stage using the newly developed immuno ATR sensor on blood sample.

13:30 - 14:00

Klaus Gerwert /University Bochum [DE] Label-free tissue classification by FTIR- and QCLbased IR-Imaging

## Tuesday, Sept. 26

14:00 - 14:30	Jürgen Popp /Leibniz Institute of Photonic Technology Jena [DE] Raman 4 clinical applications
14:30 - 14:40	Matthias Godejohann /MG Optical Solutions GmbH Utting [DE] Whole slide, label free screening of tissue on clinically relevant time scales
14:40 - 15:00	Andreas Kerstan / Agilent Technologies Waldbronn [DE] Modern Microscopes in Biomedical Research- about Ultra-High Mag Optics, Spatial resolution and Numeric Aperture (NA)

13:30 - 15:00

Lunch Session (LS 2B, Chair: Christine Blattner) Industry meets Academia

Hall 1

Researchers from leading companies in the bioscience field will present their latest findings on different research topics.

**Ulrich Brinkmann** (Roche Pharma Research)

Next generation antibody therapeutics: bispecific & multifunctiona derivatives

**Dennis Fiegen** (Boehringer Ingelheim Pharma GmbH & Co. KG) *Fragment based screening at Boehringer Ingelheim: BRD4 BD1 as an example* 

**Stefan Zielonka** (Merck KGaA): *Antibody Hit Discovery using Yeast Surface Display* 

13:30 - 15:00

Lunch Session (LS 2C, Chair: Maren Lafrentz Henning Jacobsen)

Hall 2b

25

Junior GBM Session

organized by the Junior GBM)

3:30 - 14:00 **Stefan Jakobs** /Göttingen [DE]

Live cell super-resolution microscopy with switchable fluorescent proteins

Hall 3

27

Roswitha Krick / Göttingen [DE] Dynamic fine-tuning of selective autophagy

Tuesday, Sept. 26

Parallel Session (PS 3B, Chair: Michael Thumm)

Systems Biology & Autophagy Signal Control

15:30 - 15:50 Peter Mayrhofer /Paris [FR] Decision making in autophagy – How to loose specificity

15:50 - 16:00 Short talk: Yaowen Wu /Dortmund [DE] Anti-autophagy mechanism of the Legionella pneumophila

16:00 - 16:10 Short talk: Sergii Shydlovskyi /Bochum [DE] The tail of human quanylate-binding protein 1 is switched by GTP and triggers polymerization and membrane bindina

16:10 - 16:30 Sebastian Schuck / Heidelberg [DE] Selective microautophagy of the Endoplasmic Reticulum

16:30 - 17:00 Simone Fulda /Frankfurt [DE] Molecular Targeting of Autophagic Cell Death

Parallel Session (PS 3C, Chair: Thomas Schrader) Supramolecular Chemistry on Disease-relevant Structures

Carsten Schmuck /Essen [DE] 15:00 - 15:30

Going beyond nature: Using supramolecular binding motifs to modify the structure and function of peptides

15:30 - 15:50 Barbara Saccà /Essen [DE] Hierarchical assembly of DNA filaments with designer elastic properties

15:50 - 16:00 Short talk:

Christine Beuck /Essen [DE]

NMR investigation of supramolecular ligand binding to proteins

13:30 - 15:00

Lunch Session (LS 2D)

Treffen der GBM-Studiengruppensprecher

Hall 3

15:00 - 17:00

15:00 - 15:30

Lars Redecke /Lübeck [DE]

Karine dos Santos /Berlin [DE]

the Ski2- like RNA helicase Brr2

*Intra-molecular regulation of nucleotide binding to* 

Parallel Session (PS 3A, Chair: Klaudia Giehl) 15:00 - 17:00 **Cancer & Inflammation** 

Hall 2a

15:00 - 15:30 Klaus Pantel / Hamburg [DE]

> Circulating tumor cells in cancer patients: Biology and clinical implications

15:30 - 15:50 Marcus Bantscheff / Heidelberg [DE] Drug action on the proteome

15:50 - 16:00 Short talk:

Astrid Hensel /Essen [DE]

Taspase 1 cleavage regulates Myosin 1f-induced formation of cell protrusions

16:00 - 16:10 Short talk:

Tobias Fischer /Leipzig [DE]

Synthesis and biological evaluation of cyclic Chemerin-9 analogs

16:10 - 16:30 Sandra van Vliet /Amsterdam [NL]

A bitter sweet symphony: how tumor glycans orchestrate immune evasion

16:30 - 17:00 Celso Albuquerque Reis /Porto [PO]

The role of the glycoproteome alterations in gastrointestinal cancer and its clinical applications

16:00 - 16:10	Short talk: Andreas Brunschweiger /Dortmund [DE] Finding bioactive drug-like compounds with genetically tagged screening libraries
16:10 - 16:30	David Margulies /Rehovot [IL] Molecules that generate 'Fingerprints': A new class of fluorescent probes for medical diagnosis and chemical biology
16:30 - 17:00	Ivan Huc /Pessac [FR] Recognition of biomolecules with aromatic foldamers
15:00 - 17:00	Parallel Session (PS 3D, Chair: Andreas Reiner)  Hall 2b  Emerging Analytical Methods
15:00 - 15:30	Cristina Cardoso /Darmstadt [DE] The art of delivery: labeling and manipulating intracellular targets
15:30 - 15:50	Karsten Boldt /Tübingen [DE] Dissecting the structure of protein complexes by sub-complex analysis and XL-MS
15:50 - 16:00	Short talk:  Neha Jain /Dortmund [DE]  Quantitative mapping of the interaction surface of nucleosome with the chromatin remodeler,RSC,in vivo
16:00 - 16:10	Short talk: Wignand Mühlhäuser /Freiburg [DE] Optogenetic AKT and RAF for the study of oncogenic pathways and processes
16:10 - 16:30	Edward Lemke /Heidelberg [DE] Decoding molecular plasticity in the dark proteome
16:30 - 17:00	Albert J.R. Heck /Utrecht [NL] Probing protein assemblies and interactions by hybrid mass spectrometry approaches

## Tuesday, Sept. 26

17:00 - 17:30 Coffee break **Audimax** 

Fritz Lipmann Lecture (Laudatio: Fred Wittinghofer) 17:30 - 18:30 Carol Robinson /Oxford [UK] Mass spectrometry - from folding proteins to rota-

ting motors

chondria

cell.

Audimax

The Lipmann Lecture was initiated by Feodor Lynen on the occasion of the 75th birthday of Fritz Lipmann. GBM awards the Lipmann Lecture as a plenary talk to an outstanding scientist. This years' Lipman lecturer will be Dame Carol Robinson (Oxford, UK).

18:30 - 19:00

Otto Meyerhof Prize (Laudatio: Ulrich Brandt) Jan Riemer /Cologne [DE] The way of the electron - oxidizing proteins in mito-

Audimax

Jan Riemer will receive the Otto Meyerhof award for junior scientists for his research on mechanisms of mitochondrial biogenesis, especially in the intermembrane space, the oxidative protein folding in mitochondria and communication of mitochondria with the overall Boehringer Ingelheim

19:30 - 20:15

Public Lecture (Chair: Ulrich Kück)

Hanns Hatt /Bochum [DE]

Immer der Nase nach: Neue Wirkmechanismen von

Duftstoffen im menschlichen Körper

**Audimax** 

(joint lecture of the GBM and GfG, in German language)

20:30

Conference dinner

The event will take place at the "Henrichshütte", a former ironworks, now a museum with a restaurant. We will provide a shuttle service from the conference venue to

the dinner location and back.

## Schedule / Wed., Sept. 27

09:00 - 09:45	Plenary Lecture (Chair: Alfred Wittinghofer)  Jason Chin /Cambridge [UK]  Reprogramming the genetic code	Audimax
09:45 - 10:30	Plenary Lecture (Chair: Frank Kempken)  Joseph Heitman / Durham [US]  RNAi-dependent epimutations evoke transient antifungal drug resistance	Audimax
10:30 - 11:00	Coffee break	Audimax
11:00 - 11:45	Plenary Lecture (Chair: Andrea Musacchio)  Kim Nasmyth /Oxford [UK]  The topology of cohesin's association with chromosomes and its regulation by HAWKs	Audimax
11:45 - 12:30	Closing Lecture (Chair: Thomas Günther-Pomorski) Reinhard Jahn /Göttingen [DE] Membrane fusion mediated by SNARE proteins	Audimax
12:30 - 13:00	Poster- and Pecha Kucha-prizes & final remarks	Audimax
	Rolf Heumann (Conference Organizer) Johannes Herrmann (President of the GBM)	



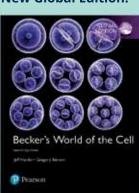
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## 2. Satellitensymposium

des GBM-Arbeitskreises "Studium Molekulare Biowissenschaften" 23. - 24. September 2017

Im Rahmen der diesjährigen GBM-Herbsttagung "Molecular Basis of Life" in Bochum wird im Vorfeld der Arbeitskreis "Studium Molekulare Biowissenschaften" sein 2. Satellitensymposium ausrichten.

Der Sprecher Rolf Heumann und sein Stellvertreter Thomas Günther-Pomorski laden alle Interessierten und Vertreter der Studiengänge rund um die "Molekularen Biowissenschaften" herzlich ein, ihre Bachelor- und Masterprogramme an Hand eines strukturierten Posters vorzustellen. Zusammen mit internen und externen Experten sollen aktuelle Themen wie Qualifikationskatalog des Biochemie-Studiums, die Digitalisierung der Lehre, Studieneingangsphase, Karrierewege in den Molekularen Biowissenschaften sowie die internationale Harmonisierung der Studiengänge diskutiert werden.

Wir freuen uns auf spannende Diskussionen!

Samstag,	
23.09.2017	

Ruhr-Universität Bochum, Veranstaltungszentrum, Ebene 04, Saal 1

12:00 - 14:00

Anmeldung und Aufhängen der Poster

14:00 - 14:15

Begrüßung & Einführung

Rolf Heumann und Thomas Günther-Pomorski (Ruhr-Universität)

14:15 - 14:35

**Jürgen Alves** /Medizinische Hochschule Hannover Qualifikationskatalog zum Bachelor- und Masterstudium Biochemie

## Programm

14:35 - 14:55	Jürgen Handke /Universität Marburg
	Hochschullehre im 21. Jahrhundert – Neue Lehr- und Kursformate

14:55 - 15:15

Carsten Roller / VBIO

Aktueller Stand der Änderungen im Akkreditierungssystem ab 2018

15:15 - 15:30

Pause

15:30 - 15:50

Rosmarie Pulz /Universität Lübeck Karrierewege in den Molekularen Biowissenschaften

15:50 - 16:10

Maren Lafrentz /Junior GBM Transparenz der Lehre

16:10 - 16:30

**Gül Akdogan** /FEBS Education Committee
FEBS Education Activities: Skills and Key Knowledge for Molecular

Life Science Graduates

16:30 - 18:00

Pause & Posterdiskussion

Sonntag, 24.09.2017 Ruhr-Universität Bochum, Veranstaltungszentrum, Ebene 04, Saal 1

09:00 - 10:30

Gruppendiskussion

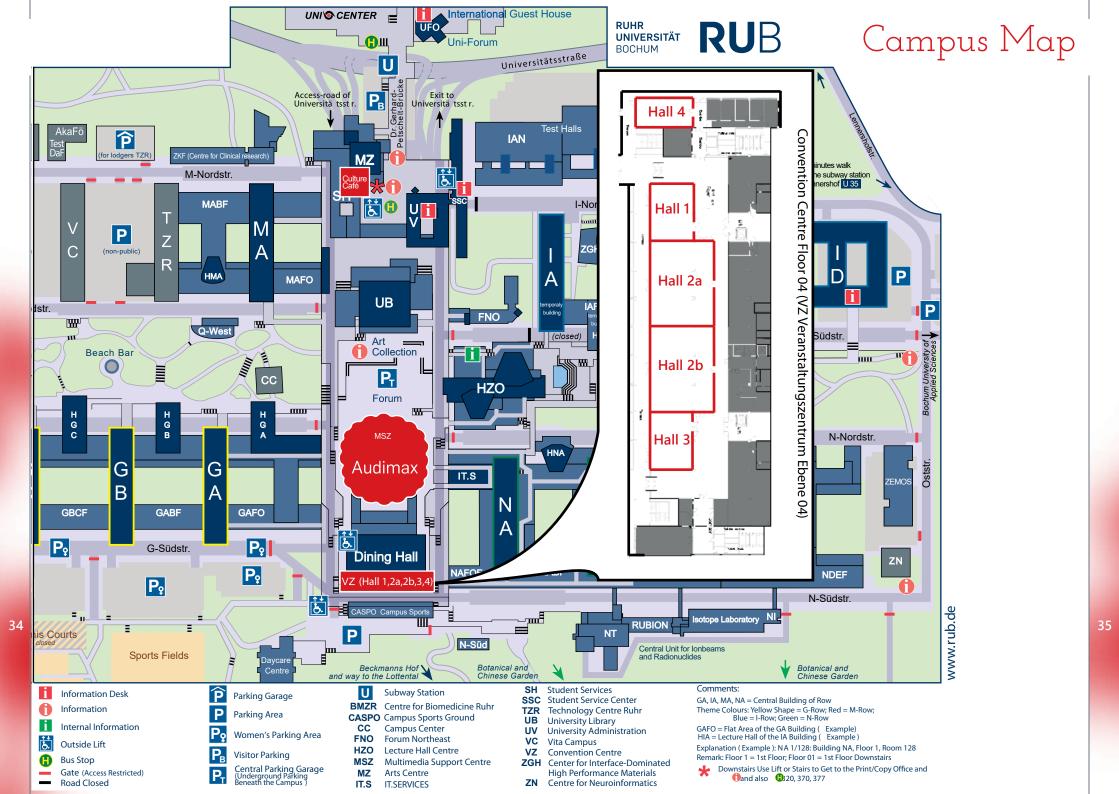
10:30 - 11:00

Präsentation der Ergebnisprotokolle

11:30 - 13:00

Plenumsdiskussion

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## Exhibition Map

# Audimax Main Entrance Plenary Hall Main Entrance

## List of Exhibitors

## Please visit the booths of our industrial partners!

Company	Booth Number	-	Company	Booth Num	ber
Cyagen Biosciences (	GmbH 1		Springer Nature		16
academics GmbH	2	) -	Implen GmbH		17
MP Biomedicals	3	}	BIOZOL Diagnostica Vertrieb GmbH		18
ChromoTek	4	ŀ	Wako Chemicals Gm	ЬU	19
TAKARA BIO EUROPE	SAS 5	;			
Biozym Scientific Gm	bH 7	,	New England BioLab	s GmbH	20
Visitron Systems Gm	bH 8	3	LI-COR Biosciences		21
Xceltis GmbH	9	)	Acris Antibodies - Or	riGene EU	22
PROMEGA GmbH	10	)	Macherey-Nagel GmbH & Co. KG		23
BMG LABTECH GmbI	Н 11		GATC Biotech		24
Zymo Research Euro <sub>l</sub>	pe GmbH 12	!	Sarstedt AG & Co.		25
Nikon GmbH Micros			Schaefer Technologie	e GmbH	26
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Macrogen Europe	15	,	SERVA Electrophores	sis GmbH	30

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At the heart of the image







## General Information

#### Abstracts

Please download and print out the abstracts for posters and talks on http://molecular-basis-of-life.org.

A very limited number of print outs are available at the registration desk.

#### Internet

There will be wireless LAN access points in the Audimax and Veranstaltungszentrum (VZ with lecture halls 1, 2a, 2b, 3, 4).

The access data are in the envelope you will receive with your check-in after or it is available at the registration desk.

#### Lunch and Coffee Breaks

Coffee, tea and mineral water will be provided for free during the coffee breaks.

A limited number of brown-bag lunch is available for free at the Audimax during the lunch breaks on Monday and Tuesday.

#### Poster Sessions/ Poster Prizes

#### Session I

Sunday, Sept 24 19:30 - 20:30 even poster numbers 20:30 - 21:30 odd poster numbers

#### Session II

Monday, Sept 25 19:30 - 20:30 odd poster numbers 20:30 - 21:30 even poster numbers

#### Session III

Tuesday, Sept 26 11:00 - 12:30 all poster numbers (visit of the poster prize jury)

#### General Information

Please see the poster list on page 42ff. for your poster number.

Together with MAGNEURON and VBIO-NRW, GBM will award five poster prizes (300 Euro each prize) on the last day of the conference.

All prizes will only be handed out to awardees that attend the award ceremony in person!

#### Registration

Sunday, Sept. 24 Monday, Sept. 25 Tuesday, Sept. 26	Opening hours 14:00 - 18:00 08:00 - 18:00 08:30 - 17:00
	08:30 - 17:00
Wednesday, Sept. 27	08:30 - 13:00

Telephone during the conference +49 69 66056710

#### Late registration

An on-site registration in Bochum is possible. The registration fees are:

Regular	485 €
PhD student	125 €
Student undergraduate	100 €
Retiree	210 €

We offer a special rate for members of the GBM, DGZ, DECHEMA, GdCH or VAAM (with proof of the membership):

Regular	395 €
PhD student	100 €
Student undergraduate	75 €
Retiree	160 €

## General Information

#### **Social Events**

Sept. 24 (Sunday), 19:15 /Audimax Get together at the Posters (with Pretzels & Beer)

Sept. 25 (Monday), 19:15 /Audimax Get together at the Posters (with Pretzels & Beer)

Sept. 25 (Monday), 22:00 /Kultur Café Party organized by Junior GBM: all participants are welcome

Sept. 26 (Tuesday), 20:15 Social evening/Networking dinner (registration required) The event will take place at the "Henrichshütte", a former ironworks, now a museum with a restaurant.

A guided tour through this unique industrial heritage including the blast furnace (166 steps) will be offered to a limited number of 75 participants.

We will provide a shuttle service from the conference venue to the dinner location and back.

Name	Poster Nr	Titlo
INAITIC	Trostel IVI	Title
Ahrens, Nicole	OT - 22	Functional analysis of zebrafish specific opsin kinases
Al-Furoukh, Natalie	GE - 02	Biochemical Characterization of a Novel Nuclease present in the Mitochondria and in the Nucleus of Human Cells
Aljakouch, Karim	CA - 26	Resistance, selectivity, distribution, and metabolism of tyrosine kinase inhibitors in cancer cells by Raman spectral imaging
Amstein, Leonie	CS - 41	In silico modeling of signaling pathways with focus on the characterization of signal flows
Angersbach, Lena	CS - 16	Identification of RBR E3 ubiquitin ligases that can compensate Parkin deficiency
Antelmann, Haike	OT - 37	Protein S-bacillithiolation functions in thiol-protection and redox regulation of the glyceraldehyde-3-phosphate dehydrogenase Gap in Staphylococcus aureus under hypo- chlorite stress
Assafa, Tufa	CA - 19	Interaction of pro-apoptotic spin-labelled BIM BH3 peptides with solvents and Bcl-2 proteins
Athanasopoulos, Panagiotis	AP - 03	The role of PP2A in the complex intramolecular activation of LRRK2
Bäcker, Sandra	SM - 02	Dissection and Modulation of (patho)biological Survivin Functions by supramolecular Ligands
Baumruck, Andreas	OT - 42	Synthesis, purification and characterization of membrane proteins using in situ-cleavable solubilizing tail
Becker, Thomas	SC - 02	Connection of mitochondrial protein and metabolite transport
Bender, Julian	AM - 03	Structure and dynamics of the neuronal calcium-sensor Synaptotagmin-1
Berlemann, Lena	CS - 14	A mitophagy-independent neuroprotective activity of the mitochondrial kinase PINK1
Beuck, Christine	SM - 07	NMR investigation of supramolecular ligand binding to proteins
Bialas, Nataniel	OT - 29	Fluorescence imaging og the interactions between ultrasmall gold nanoparticles and bacteria
Bird, Alexander	OT - 05	A new mechanism for clathrin stabilization of microtubules via adaptor-like interactions on the mitotic spindle
Blattner, Christine	OT - 13	Fam83F is a novel regulator of p53
Bleicken, Stephanie	CA - 20	Membrane-embedded Bcl-2 proteins: Insights into topologies and interactions
Böhm, Raphael	OT - 20	Gating Mechanism of the Mitochondrial Voltage-Dependent Anion Channel
Bohnsack, Markus T.	RR - 02	METTL16 is a N6-methyladenosine (m6A) methyltrans- ferase that targets a conserved region of the U6 snRNA required for pre-mRNA splicing

## (sorted by presenting author)

Name	Poster Nr	Title
Boland, Andreas	GE - 01	Cryo-EM structure of a metazoan separase-securin complex at near-atomic resolution
Bommer, Ulrich	CA - 02	Role and regulation of translationally controlled tumour protein TCTP in colorectal cancer
Boutouja, Fahd	CS - 22	Involvement of vacuolar proteins in the biogenesis of peroxisomes.
Boutouja, Fahd	SB - 03	Rapamycin-induced peroxisome degradation (R.I.P.): a novel degradation mode for peroxisomes.
Breitinger, Hans-Georg	PA - 01	Glucose – a potentiator of neuronal glycine receptors and possible modulator of nociceptive signaling
Brinkmeier, Rebecca	SB - 02	Ubiquitination/Deubiquitination-dynamics of the PTS1-receptor Pex5p regulate the matrix protein into peroxisomes.
Brömer, Meike	RR - 04	A de-ubiquitylating enzyme as new stress granule component
Bruns, Oliver	CA - 22	Next generation in vivo optical imaging with novel short- wave infrared emitting probes
Brunschweiger, Andreas	SM - 05	Finding bioactive drug-like compounds with genetically tagged screening libraries
Brylski, Oliver	OT - 40	Classification of PAPS-synthase mutants and their stability in the cellular environment
Budde, Heidi	CS - 08	The soluble adenylyl cyclase as a novel pivotal player in ISO/ICI-induced cardiac hypertrophy
Bukhari, Hassan	CS - 17	Intracellular signaling and dynamics of Alzheimer's disease relevant nuclear spheres
Cavaller, Victor	SC - 08	Hypercyclical patterns in the neuron cell: integration of information processing at cellular scale
Cimiotti, Diana	OT - 46	The polymorphism V158M in myosin binding protein C affects its binding to cardiac troponin I variants inducing infantile restrictive cardiomyopathy.
Dabiri, Yasamin	CA - 11	The essential role of TAp73 in bortezomib-induced apoptosis in p53- deficient colorectal cancer cells
Daikh, Badis	OT - 01	Follow-up of Healing of skin wounds by topical application of platelet-rich plasma in sheep.
David, Della	AP - 13	Disruption of protein quality control has opposite effects on age-dependent protein aggregation in different tissues
Deitersen, Jana	AP - 11	Identification of autophagy-modulating natural products and derivatives
den Brave, Fabian	AP - 08	Function of SUMO in response to proteotoxic stress
Dietzel, Irmgard D.	OT - 38	FUdR enables flexible adjustment of neuron/glia ratio in culture

		I
Name	Poster Nr	Title
Divvela, Satya Srirama Karthik	OT - 19	Atoh8 in reprogramming and maintenance of pluripotency
Do Yoo, Young	CS - 11	Romo1 is a mitochondrial non-selective cation channel with viroporin-like characteristics
Dreier, Max-Aymelt	OT - 48	Red Color-Tuned variants of Channelrhodopsin-2 investigated by Time Resolved FTIR
Durzmaz, Burak	CA - 23	Effect of different extraction techniques on anti-inflammatory activity of propolis
Eberth, Sonja	CA - 08	Deciphering targets and function of microRNAs that play a role in aggressive B cell lymphomas
Eggers, Britta	OT - 08	Proteomic Characterization of Murine Muscle Fiber Types via Lasermicrodissection and LC MS/MS Mass Spectrometry
Ehrke, Alexander	CS - 18	The F-BAR protein NOSTRIN regulates diastolic and systolic function of the heart
Eickelbeck, Dennis	CS - 03	Switching GPCR Signaling On and Off with Light: Melanopsin Variants for Transient versus Sustained Activation
el Maaty, Mohamed Abu	CA - 13	1,25(OH)2D3 reduces TXNIP expression in breast cancer cells through a cross-talk between metabolic rewiring and protein degradation
el Maaty, Mohamed Abu	CA - 14	Expression of TXNIP in cancer cells and regulation by 1,25(OH)2D3: Is it really the vitamin D3 upregulated protein?
Elbers, Dana	OT - 26	Ca2+-dependent feedback mechanism of recoverin iso- forms and G-protein-coupled receptor kinases in zebrafish phototransduction
El-Yassin, Hedef	AP - 04	Sarcopenia in Iraqi Subjects: A biochemical approach for diagnosis
Erdmann, Constanze	OT - 04	Cardiac actin mutants causing hypertrophic and dilated cardiomyopathies
Ernst, Robert	CS - 02	Crosstalk of lipids and protein folding stress: Lipid finger- prints of a stressed ER
Etzkorn, Manuel	CS - 07	Protein-membrane interactions as modulators in hormone signalling and protein aggregation
Eulenburg, Volker	PA - 03	Inhibition of glycine transporter 1 as a novel approach for the treatment of chronic pain conditions.
Falk, Sebastian	RR - 03	Mpp6 incorporation in the nuclear exosome contributes to RNA channeling through the Mtr4 helicase
Fedorov, Ivan	CS - 35	A novel affinity-based method for the isolation of exosomes.
Fichtner, Miriam	OT - 15	Features of the two isoforms of the soluble receptor sTACI
Fischer, Tobias	CA - 06	Synthesis and Biological Evaluation of Cyclic Chemerin-9 Analogs

## (sorted by presenting author)

Name	Poster Nr	Title
Fuchs, Philippe	ET - 01	Re-modelling plant mitochondrial respiration during drought
Funke, Lukas	OT - 45	Time course analysis of lung proteome modulations in an ovalbumin mouse model of asthma bronchiale
Gesper, Astrid	CS - 05	Investigating nanoparticle-cell interactions with scanning ion conductance microscopy
Gesper, Astrid	OT - 36	Pitfalls of using total protein content for normalization of membrane proteins
Giehl, Klaudia	CS - 19	Molecular mechanism determining the interaction of K-Ras and Galectin-8
Gilsbach, Bernd	AP - 01	Characterization of LRRK2
Girbig, Mathias	GE - 03	Recombinant production and mutagenesis of the 23-sub- unit dynactin complex
Gleditzsch, Daniel	GE - 04	Structural basis of CRISPR RNA-guided DNA recognition by a minimal Type I-Fv Cascade surveillance complex
Glomb, Oliver	SC - 05	YFR016c-Characterization of a novel interaction partner of the yeast polarisome with a potential role in actin organi- zation
Gnutt, David	OT - 41	Intracellular modulation of protein folding stability probed by a SOD1 based folding sensor
Grad, Jean-Noël	SM - 08	Targeting protein-protein interactions via supramolecular ligands — Mechanistic insight by molecular modeling
Hagemann, Philipp	SC - 01	Knowledge of cell membrane topography allows fluorescence correlation spectroscopy to reveal the molecular organization of the cell membrane at a new level of detail
Hallstein, Ina	CS - 25	Does PDK1 phosphorylate the tumor suppressor LKB1?
Hänelt, Inga	CS - 24	Allosteric control of the K(+) uptake system KtrAB
Hansen, Tobias	SB - 04	Identification of Proteins involved in LD Biogenesis by High-Throughput Screen
Hassoun, Roua	OT - 11	Molecular consequences of a novel and spontaneous infantile mutation in TNNC1 leading to the expression of cTnC G34S
Hayduk, Matthias	SM - 06	Novel luminophores with aggregation induced emission properties for protein recognition
Heid, Christian	OT - 57	Molecular Tweezers for Specific Protein Surface Recognition
Heinecke, Dominic	OT - 17	Elucidating a mechanism of microtubule stabilization contributing to chromosomal instability in cancer cells
Heiselmayer, Christina	CA - 16	Cleavage of the transcription factor USF2 by Taspase1 counteracts heterodimerization with USF1 and CDK4 expression

Name	Poster Nr	Title
Helmsen, Sabine	CA - 15	Application of a highly miniaturized microarray for target- oriented search strategy for new (Hsp) inhibitors
Hensel, Astrid	CA - 07	Taspase 1 cleavage regulates Myosin 1f-induced formation of cell protrusions
Herrera, Sara Abad	CS - 26	Purification and characterisation of the yeast plasma membrane ATP binding cassette transporter Pdr11p
Herwig, Melissa	OT - 28	Impact of cGMP-PKG Pathway Modulation on Titin Phosphorylation and Titin-Based Myocardial Passive Stiffness
Ho, Franz Y.F.	AP - 06	Biochemical and Structural analyses of the RocCOR domain.
Höfer, Katharina	RR - 06	NAD-capped RNA in bacteria: Discovery, Scope and Function
Hoffmeister, Meike	CS - 10	NOSIP is essential for craniofacial development and developmental neurogenesis in mice
Ince, Semra	OT - 43	The C-terminus of the human guanylate-binding protein 1 regulates its unique GTPase activity
Jain, Neha	AM - 01	Quantitative mapping of the interaction surface of nucleosome with the chromatin remodeler,RSC,in vivo
Jung, Sebastian	OT - 24	A comparative analysis of Sec61- and SecY-mediated transport of intrinsically disordered proteins
Kalel, Vishal	SC - 11	Evolutionary divergent organelles provide novel anti-parasite drug targets
Kao, Wei-Chun	ET - 02	The obligate respiratory supercomplex from the actinobacterium Corynebacterium glutamicum
Karin Steinacker, Lena	CS - 36	Chemical Synthesis of Switchable Protein-Based Nanopores
Kaulich, Manuel	GE - 07	Towards identifying therapy resistance-inducing "driver" mutations in the human non-coding genome.
Kitanovski, Simo	OT - 09	genphen: A tool for quantification of genotype-phenotype associations using statistical learning techniques and Bayesian inference
Klümper, Jessica	SC - 06	Functional characterization of a newly identified interaction site between the peroxisomal pore components PEX5 and PEX14.
Koch, Julian	AM - 04	Advanced fluorescence spectroscopy and stopped-flow experiments, a perfect couple for studying protein association dynamics
Kolbe, Katharina	CS - 21	Nuclear spheres are highly enriched in the human AD brain and are regulated by APP T668 phosphorylation
Kollenda, Sebastian	OT - 47	A fluorescence-based calcium phosphate nanoparticle probe to elucidate lysosomal entrapment in living cells
Koßmann, Katja	OT - 35	HOBbing proteins with DNA

## (sorted by presenting author)

Name	Poster Nr	Title
Kreimendahl, Sebastian	SC - 10	VMC1: Mitochondrial Targeting of a Virus-encoded Protein
Kromer, Jan-Michael	SC - 04	The tip localization of the polarisome depends on its interaction with the type V myosin Myo2
Kuhn, Claus	RR - 07	The role of piRNAs in planarian regeneration
Küpper, Claus	CA - 24	Colon cancer tissue sections investigated by IR - Imaging
Kutsch, Miriam	OT - 39	Molecular insights into the networking of human guanylate binding proteins
Lammers, Michael	AP - 02	Lysine-acetylation in cellular regulation, ageing and disease.
Lausen, Jörn	CA - 03	Epigenetic control of Hematopoiesis by Histone Arginine Methylation
Lechtonen, Tatjana	CA - 25	Non-invasive diagnosis of bladder cancer in urine by label- free Raman micro-spectroscopy
Leidreiter, Franziska	OT - 51	Structural insights into different Tc toxins of human and insect pathogenic bacteria
Leonhardt, Gregor	CA - 21	The enzymatic activity of glycerophosphodiesterase EDI3
Lesjak, Michaela	CA - 01	p21-activated kinases (PAKs) regulate invadopodia formation in cancer cells
Lokau, Juliane	CS - 32	Proteolytic Control of Interleukin-11 Signalling
Lübben, Mathias	MM - 02	Zn-ATPase: Observation of Hydrolysis Reaction by Vibrational Spectroscopy
Marie Kühnel, Ronja	CS - 40	Lipid-conjugated pH-sensors for advanced biological approaches
Massarczyk, Matthias	OT - 52	Local Mode Analysis: Decoding IR Spectra by Visualizing Molecular Details
Mastalski, Thomas	SB - 02	Ubiquitination/Deubiquitination-dynamics of the PTS1-receptor Pex5p regulate the matrix protein into peroxisomes.
Mayerthaler, Florian	OT - 16	FRET monitoring of conformational changes in a nonribosomal peptide synthetase
Medenbach, Jan	RR - 01	Drosophila Sister of Sex-lethal antagonizes Sxl-lethal- dependent splicing to maintain a male-specific gene expression pattern
Meinl, Hanna	CA - 09	Bifunctional Immunoactive siRNAs as an Approach to Personalized AML Therapy
Menke, Andre	OT - 34	TGFβ1-induced cell migration of NSCLC lung cancer cells by Smad-dependent and -independent mechanisms
Meschede, Jens	CS - 13	The Parkin-coregulated gene PACRG rescues defective NF- κB signaling in SHARPIN-deficient cells by stabilizing the linear ubiquitin assembly complex
Mick, David	CS - 33	APEX-based Proximity Labeling reveals Hedgehog-induced Remodeling of the Ciliary Proteome

Name	Poster Nr	Title
Name	Poster IVI	Title
Mosel, Stefanie	CA - 17	A novel role for the anti-apoptotic protein Survivin in DNA repair and replication
Mühlhäuser, Wignand	AM - 06	Optogenetic AKT and RAF for the study of oncogenic pathways and processes
Müller, Günter	OT - 33	Biosensing of Complete Glycosylphosphatidylinositol-Anchored Cell Surface Proteins (GPI-AP) in Serum as Biomarkers for Metabolic Diseases
Müller, Günter	SM - 01	Biosensing of Extracellular Complexes of Complete Glyco- sylphosphatidylinositol-Anchored Proteins and Phospho- lipids as Biomarkers for Stress-Induced Diseases
Müller-Planitz, Felix	GE - 05	Structure and function of the chromatin remodeling enzyme ISWI
Naghavi, Mohammad Reza	OT - 03	Expression of genes involved in Taxol biosynthetic pathway in Taxus baccata L. and application of Magnetic- and carbon-based nano-adsorbents for pre-purification of Taxol
Neumann, Sebastian	CS - 28	Ha-Ras mediated neuroprotection – involvement of plasma membrane localized Voltage-dependent anion channel 1 (VDAC-1)?
Nguemgo Kouam, Pascaline	CA - 05	FAK-Inhibitor-PF-573228 can reduce the Ionizing Radiation-induced Adhesion of Cancer Cells to Endothelial Cells in Vitro.
Nguemgo Kouam, Pascaline	CA - 10	Extravasation of Tumor Cells might be promoted by Photon Irradiation
Nowaczyk, Marc	MM - 01	Application of the TwinStrep-tag/Streptactin system for purification of photosynthetic membrane protein complexes from T. elongatus
Nowaczyk, Marc	MM - 04	The role of small single transmembrane proteins for NDH-1 assembly and stability in cyanobacteria
Nuriev, Wasifa	OT - 44	Nonstructural proteins 7 / 8 of Middle-East respiratory syndrome coronavirus: Primase or RNA-dependent RNA polymerase?
Obst, Sebastian	CS - 38	Investigation of possibly new glutamate receptor auxiliary proteins - claudins
Ökten, Zeynep	SC - 07	Linking microtubule and actin-based transport systems
Onochie, Uchenna	OT - 02	Biochemical implications of adminstration of Halofantrine Gydrochloride (HALFAN) on estradiol levels of femal wistar rats
Özcan, Ahsen	GE - 06	Characterization of the Type IV CRISPR-Cas system of Aromatoleum aromaticum EbN1
Paliga, Dennis	CS - 31	Toxin mediated delivery of functional Nurr1 fusion protein as promising tool for programming of dopaminergic cells
Pandey, Vishnupriya	ET - 03	Structural and functional characterization of the interaction of yeast cytochrome bc1 with cytochrome c

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Name	Poster Nr	Title
Papadopoulos, Theofilos	CS - 04	Phosphoinositide-dependent regulation of GABAergic neurotransmission at inhibitory postsynapses
Peters, Winfried	RR - 08	Are symplasmic tissues appropriate routes for signaling based on RNA and other stuff? Not necessarily.
Pfeifer, Wolfgang	OT - 55	Hierarchical assembly of DNA filaments with designer elastic properties
Pollok, Stefan	CS - 34	Study of ionotropic glutamate receptors using photoswitchable ligands
Porcellato, Elena	AM - 02	Establishment of an in vivo and cell-specific method for the identification of palmitoyltransferase-interacting proteins in Drosophila using BioID
Pospich, Sabrina	OT - 49	Near-atomic structure of jasplakinolide-stabilized malaria parasite F-actin reveals the structural basis of filament instability
Quentin, Dennis	OT - 50	Structural studies of a toxin loaded Type VI secretion (T6S) effector complex using electron microscopy
Rabe, Kersten	OT - 58	Directed protein evolution for thermophile biotechnology
Radke, Juliane Lara	SB - 07	Screening for novel factors involved in the peroxisomal de novo synthesis in S. cerevisiae
Radziwill, Gerald	CS - 39	The scaffold protein CNK1 controls RAF and AKT signaling and cell fate decisions
Raudzus, Fabian	CS - 37	Remote Control of Cell Signaling Pathways with Magnetic Nanoparticles inside Living Cells
Reiterer, Pia	CS - 42	optogenetic control of eyeblink conditioning in mice
Reuter, Maren	SC - 09	Towards the mechanism of peroxisomal matrix protein import in mammalian cells
Riebe, Steffen	CS - 43	Transfection Agents with Aggregation Induced Emission Properties
Rinne, Andreas	CS - 06	An intramolecular pathway for the voltage dependence of muscarinic GPCRs
Rudolf, Sarina	CS - 23	Crosslinking the Neuropeptide Y5 Receptor by Photoreactive Biotin Analogues
Ruks, Tatjana	SM - 03	Ultrasmall Gold Nanoparticles for Protein-Specific Targeting: Investigation by NMR Spectroscopy
Särchen, Vinzenz	CS - 29	Palmitoylation - Emerging roles in TNF-R1 endocytic traf- ficking and signaling
Scheidel, Jennifer	SB - 05	isiKnock: a tool for in silico knockouts of signaling pathways
Schilde, Lukas	AP - 12	The variabilityof the CSF proteome: An imporant aspect for protein biomarker studies

Name	Poster Nr	Title
Schöneborn, Hendrik	CS - 37	Remote Control of Cell Signaling Pathways with Magnetic Nanoparticles inside Living Cells
Schöneweiß, Elisa-Charlott	OT - 56	The Collective Behavior of Spring-like Motifs Tethered to a DNA Origami Nanostructure
Schröder, Elisabeth	RR - 05	TFIIA transcriptional activity is controlled by a "cleave-and-run" Exportin-1/Taspase 1-switch
Schrul, Bianca	SC - 03	An unexpected Liaison of Lipid Droplets and Peroxisomes – PEX19-mediated Protein Targeting to Lipid Droplets
Schwerter, Daniel	CS - 12	Insight into receptor targeting by the peroxisomal AAA+ complex Pex1p/Pex6p of the yeast Saccharomyces cerevisiae
Schwichtenberg, Jan	SC - 10	VMC1: Mitochondrial Targeting of a Virus-encoded Protein
Schwitalla, Jan Claudius	OT - 07	Optogenetic control of cerebellar output abolishes generalized seizures
Sehr, Dominik A.	CS - 15	Linear ubiquitination is essential for the neuroprotective activity of Parkin
Selenina, Anastasiia	OT - 12	Inhibition and knockout of subunits of immunoproteasome decrease the efficiency of reprogramming murine fibroblasts into iPSCs
Shydlovskyi, Sergii	SB - 06	The tail of human guanylate-binding protein 1 is switched by GTP and triggers polymerization and membrane binding
Sokolova, Viktoriya	OT - 25	Application of calcium phosphate nanoparticles for transfection and gene silencing in 2D and 3D cell culture models
Sommerkamp, Johannes	OT - 30	Crystallographic and Biochemical Studies Reveal Insight into Phycoerythrobilin Biosynthesis
Span, Ingrid	OT - 18	Artificial cobalt-sulfur proteins as redox biocatalysts
Spinck, Martin	AM - 05	Directed Evolution of Lysine Deacetylases
Steinbach, Simone	AP - 09	Effects of evaluation of possible agents in the context of Parkinson's disease
Steinbach, Simone	AP - 10	Which proteins are responsible for the selective neuronal vulnerability in Parkinson's disease?
Stepath, Markus	CA - 18	Quantification strategies in phosphoproteomics: A Comparison of SILAC, TMT and label-free techniques to study EGFR signal transduction networks and phosphorylation dynamics in the colorectal cancer cell line DiFi upon Cetuximab treatment
Stockmann, Julia	AP - 14	An Immuno-Infrared Sensor Enables the Preselection of Drug Candidates for Alzheimer's Disease

## (sorted by presenting author)

Name	Poster Nr	Title
Strasdeit, Tobias	CS - 01	Claudins: An Unexpected Source For More Tetraspanning Proteins Acting As Transmembrane AMPA Receptor Modu- latory Proteins
Surdin, Tatjana	OT - 10	Cerebellar Involvement in Spatial Information Processing
Tennigkeit, Stefan	OT - 54	Biophysical Investigations on microbial rhodopsins using theoretical methods
Terheyden, Susanne	AP - 07	Biochemical characterization of prokaryotic Roco protein family members
Terheyden-Keighley, Daniel	CS - 44	The role of receptor CXCR4 in the developing peripheral nervous system
Teuber, Christian	OT - 53	Investigation of the G $\alpha$ s Modification by Choleratoxin with time resolved FTIR spectroscopy
Teucher, Markus	CS - 27	Interactions and conformational changes of BcI-2 proteins regulating cell death
Trautvetter, Jonas	OT - 21	RD3 and dysregulation of photoreceptor guanylate cyclase E (GC-E)
Tuppi, Marcel	CA - 12	Oocyte DNA damage quality control requires consecutive interplay of CHK2 and CK1 to activate p63.
Uxa, Sigrid	CA - 04	Transcriptional expression of the proliferation marker Ki-67
Vallet, Cecilia	SM - 04	Molecular characterization and modulation of Survivin's cellular functions with supramolecular ligands
Verhuelsdonk, Lukas	OT - 14	Recombinant expression of murine DNase1-like 2 in Pichia pastoris
Vocke, Kai	OT - 31	Towards time resolved kinetics of Biliverdin reduction by FDBRs
Vu, Van Loi	OT - 23	Real-time imaging of the bacillithiol redox potential in the human pathogen Staphylococcus aureus using a geneti- cally encoded bacilliredoxin-fused redox biosensor
Walter, Thomas	CS - 30	Assembly of peroxisomal pre-import complexes
Wimberg, Hanna	OT - 32	Interaction of RD3 with enzymes of the nucleotide cycle in photoreceptors
Wolf, Philipp	CS - 20	Post-translational Labeling of Cardiovascular Receptors to Investigate Receptor Dimerization
Wu, Yaowen	SB - 01	Anti-autophagy mechanism of the Legionella pneumophila
You, Weijie	AP - 05	Sirtuin 6 Activation by Synthetic Small Molecules
Yue, Qing	CA - 15	Application of a highly miniaturized microarray for target- oriented search strategy for new (Hsp) inhibitors
Zang, Johannes	OT - 06	A Proteomics approach to childhood maltreatment
Zeilinger, Carsten	CA - 15	Application of a highly miniaturized microarray for target- oriented search strategy for new (Hsp) inhibitors

Name	Poster Nr	Title
Zella, Samis	PA - 02	Landscape of pain in Parkinson's disease
Zickermann, Volker	MM - 03	Accessory subunits of mitochondrial complex I
Ziffert, Isabelle	CS - 09	Internalization and Resensitization of Neuropeptide Y1 and Y2 Receptors
Zlomke-Sell, Sarah-Karina	OT - 27	Zebrafish GCAP5 – a redox-sensitive regulator of the guanylate cyclase?

## Organisation

#### Organizer

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Rolf Heumann	Ruhr University Bochum (Head of the organization team)
Ralf Erdmann	Ruhr University Bochum
Roger Goody	Max Planck Institute Dortmund
Stefan Herlitze	Ruhr University Bochum
Michael Hollmann	Ruhr University Bochum
Shirley Knauer	University Duisburg-Essen
Andrea Musacchio	Max Planck Institute Dortmund
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Stefan Raunser	Max Planck Institute Dortmund
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Hendrik Schöneborn	Ruhr University Bochum
Claus Seidel	University Düsseldorf
Konstanze Winklhofer	Ruhr University Bochum
Alfred Wittinghofer	Max Planck Institute Dortmund
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Roland Brandt	University Osnabrück (SG Molecular Neurobiology)
Klaudia Giehl	University Giessen (SG Biochemical Pharmakology and Toxicology)
Ralf Erdmann	Ruhr University Bochum (SG Molekulare Zellbiologie)
Lothar Elling	RWTH Aachen (SG Glycobiology)
Roland Hartmann	University Marburg (SG RNA Biochemistry)

(SG RNA Biochemistry)

Mark Helm

University Mainz (SG RNA Biochemistry)

Johannes Herrmann

University Kaiserslautern (SG Redox Biology)

Rüdiger Hell

University Heidelberg (SG Plant Biochemistry)

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Carola Hunte	University Freiburg (SG Bioenergetic)
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Ina Koch	University Frankfurt am Main (SG Bioinformatic)
Harald Kolmar	Technical University Darmstadt (SG Protein Engineering)
Oliver Poetz	University Tübingen (SG Bioanalytic)
Tassula Proikas-Cezanne	University Tübingen (SG Autophagy)
Lennart Randau	University Marburg (SG RNA Biochemistry)
Lutz Schmitt	University Düsseldorf (SG Biomembranes)
Claus Seidel	University Düsseldorf (SG Biophysical Chemistry)
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Carmen Villmann	University Würzburg (SG Molecular Medicine)
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Die GBM ist als gemeinnützige wissenschaftliche Fachgesellschaft unter Nummer 4265 in das Vereinsregister der Stadt Frankfurt am Main eingetragen.

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Annette Beck-Sickinger (1. Vizepräsidentin)

Johannes Buchner (2. Vizepräsident)

Jürgen Alves (Schriftführer) Wolfgang Trommer (Schatzmeister)

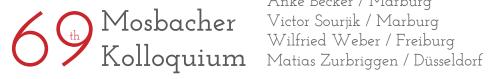
## Notes

Notes

March 22 - 24, 2018 Mosbach / Baden, Germany

#### Organization:

Anke Becker / Marburg



#### SYNTHETIC BIOLOGY -FROM UNDERSTANDING TO APPLICATION



Cell-free & cell-like systems
Cees Dekker / Delft [NL] - Petra Schwille / Munich [DE]
Sven Panke / Basel [CH] - Dora Tang / Dresden [DE]

#### Post-translational network control

Wolfgang Schamel / Freiburg [DE] - Barbara Di Ventura / Heidelberg [DE] - Jared Toettcher / Princeton [US]

#### **Engineering genomes and networks**

John Glass / La Jolla [US] - Christopher Voigt / Boston [US] Yaakov Benenson / Basel [CH] - Sarah O'Conner / Norwich (UK]

Application in biotechnology & medicine
Jay Keasling / Berkeley [US] - Martin Fussenegger / Basel [CH]
Tobias Erb / Marburg [DE] - Michael Bott / Julich [DE]

#### Application in fundamental research

Jason Chin / Cambridge [UK] - Lukas Kapitein / Utrecht [NL] Teva Vernoux / Lyon [FR] - Michael Reth / Freiburg [DE]

#### Feodor Lynen Lecture

Wendell Lim / San Francisco [USA]

#### Otto Warburg Medal

Peter Hegemann / Berlin [DE]

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