

## Biological Physics Division Fachverband Biologische Physik (BP)

Helmut Grubmüller  
Max-Planck-Institut für  
Biophysikalische Chemie  
Theoretische und  
Computergestützte Biophysik  
Am Fassberg 11  
D-37077 Göttingen  
hgrubmu@gwdg.de

Sarah Köster  
Georg-August-Universität Göttingen  
Institut für Röntgenphysik  
Friedrich-Hund-Platz 1  
D-37077 Göttingen  
sarah.koester@phys.uni-  
goettingen.de

Matthias Rief  
Lehrstuhl für Biophysik E22  
Physikdepartment der Technischen  
Universität München  
James-Franck-Straße  
D-85748 Garching  
mrief@ph.tum.de

### Overview of Invited Talks and Sessions

(Lecture rooms H43, H44, and H45; Poster C)

#### Plenary Talks with special interest for BP

PV I	Mon	8:30– 9:15	H1	<b>Merging light with nanoparticles: artificial molecules, photocatalysis, cancer therapy, and solar steam</b> — ●NAOMI J. HALAS
PV IV	Mon	14:00–14:45	H1	<b>Recent Advances and Opportunities in Electron Microscopy of Materials</b> — ●ULRICH DAHMEN
PV XV	Wed	14:00–14:45	H1	<b>Taming Molecules in Hybrid Nanosystems</b> — ●JÜRGEN P. RABE
PV XXIV	Thu	14:00–14:45	H15	<b>Single-Molecule Spectroscopy of Biomolecular Dynamics at the Nanoscale</b> — ●BEN SCHULER

#### Invited Talks

BP 2.1	Mon	9:30–10:00	H43	<b>Multicellular Streaming in Solid Tumours</b> — ●JOSEF KÄS, FRANZISKA WETZEL, ANATOL FRITSCH, STEVE PAWLIZAK, LINDA OSWALD, STEFFEN GROSSER, LISA MANNING, CRISTINA MARCHETTI, MICHAEL HÖCKEL, JOHN CONDEELIS
BP 3.1	Mon	9:30–10:00	H44	<b>Structural Dynamics of Single G-protein Coupled Receptors</b> — ●EMMANUEL MARGEAT
BP 7.1	Mon	11:15–11:45	H45	<b>Relating biological networks to gene expression patterns</b> — ●MARC-THORSTEN HÜTT
BP 8.1	Mon	11:30–12:00	H43	<b>Prospects of super-resolution optical microscopy for studying membrane bioactivity</b> — ●CHRISTIAN EGGELING, MARCO FRITZSCHE, ERDINC SEZGIN
BP 11.4	Mon	16:00–16:30	H43	<b>Chromophore Photophysics in Fluorescent Proteins of the GFP family</b> — ●GERD ULRICH NIENHAUS
BP 12.1	Mon	15:00–15:30	H45	<b>Imaging of G-protein coupled receptors while quantifying their ligand-binding free energy landscape to multiple ligands</b> — ●DANIEL J. MÜLLER, DAVID ALSTEENS, MORITZ PFREUNDSCHUH, PATRIZIA M. SPOERRI, SHAUN R. COUGHLIN, CHENG ZHANG, BRIAN K. KOBILKA
BP 27.1	Tue	9:30–10:00	H43	<b>Membrane proteins under voltage: simulations of ion channels and receptors at work</b> — ●ULRICH ZACHARIAE
BP 28.1	Tue	9:30–10:00	H44	<b>Molecular Bioimaging of Genome Transcription</b> — ●PATRICK CRAMER
BP 28.5	Tue	11:15–11:45	H44	<b>The biosynthetic basis of budding yeast cell size control</b> — ●KURT M. SCHMOLLER, JONATHAN J TURNER, MARDO KOIVOMÄGI, DEVON CHANDLER-BROWN, JAN M. SKOTHEIM
BP 29.1	Tue	9:30–10:00	H45	<b>Cell Migration in Confined Geometries</b> — ●JOACHIM O. RÄDLER, FELIX J. SEGERER, ANNA-KRISTINA MAREL, MATTHIAS L. ZORN, CHRISTOPH SCHREIBER, PETER RÖTTGERMANN, ALEXANDRA FINK, FLORIAN THÜROFF, ERWIN FREY
BP 36.1	Wed	9:30–10:00	H43	<b>Molecular simulation of protein dynamics and function</b> — ●GERHARD HUMMER

BP 37.1	Wed	9:30–10:00	H44	<b>Reconstituting basic mitotic spindles in artificial confinement</b> — •MARILEEN DOGTEROM
BP 38.1	Wed	9:30–10:00	H45	<b>Optogenetics: Basics, Applications and Chances</b> — •ERNST BAMBERG
BP 38.2	Wed	10:00–10:30	H45	<b>The mechanical control of CNS development and functioning</b> — •KRISTIAN FRANZE
BP 43.1	Wed	15:00–15:30	H43	<b>Cellular Mechanosensing</b> — •RUDOLF MERKEL
BP 44.1	Wed	15:00–15:30	H45	<b>Physics for the Origins of Life</b> — •DIETER BRAUN
BP 57.1	Thu	9:30–10:00	H43	<b>Monolayer curvature induced nanoscale structures in lipid membranes</b> — •FRIEDERIKE SCHMID
BP 58.1	Thu	9:30–10:00	H44	<b>Cytoskeletal coordination</b> — •GIJSJE KOENDERINK
BP 58.8	Thu	11:45–12:15	H44	<b>Single molecule studies on myosin motors</b> — •CLAUDIA VEIGEL
BP 59.1	Thu	9:30–10:00	H45	<b>RNA-based gene circuits in vitro and in vivo</b> — •FRIEDRICH SIMMEL
BP 65.1	Thu	15:00–15:30	H43	<b>Design features of a membrane-assisted protein oscillator</b> — •PETRA SCHWILLE

### Invited talks of the joint symposium Anomalous Diffusion in Complex Environments (SYAD)

See SYAD for the full program of the symposium.

SYAD 1.1	Thu	15:00–15:30	H15	<b>Phenomenology of Collective Chemotaxis in Artificial and Living Active Matter</b> — •RAMIN GOLESTANIAN
SYAD 1.2	Thu	15:30–16:00	H15	<b>First-passage times of Markovian and non Markovian random walks in confinement</b> — •RAPHAEL VOITURIEZ
SYAD 1.3	Thu	16:00–16:30	H15	<b>Cytoskeleton organization as an optimized, spatially inhomogeneous intermittent search strategy</b> — •HEIKO RIEGER, YANNICK SCHRÖDER, KARSTEN SCHWARZ
SYAD 1.4	Thu	16:45–17:15	H15	<b>Ergodicity violation and ageing in living biological cells</b> — •RALF METZLER
SYAD 1.5	Thu	17:15–17:45	H15	<b>Anomalous diffusion within cells</b> — SARAH KLEIN, •CECILE APPERT-ROLLAND, LUDGER SANTEN

### Invited talks of the joint symposium Scientometric Maps and Dynamic Models of Science and Scientific Collaboration Networks (SYSM)

See SYSM for the full program of the symposium.

SYSM 1.1	Thu	9:30–10:00	H1	<b>Science Forecasts: Measuring, Predicting, and Communicating Scientific Developments</b> — •KATY BÖRNER
SYSM 1.2	Thu	10:00–10:30	H1	<b>Mapping science with variable-order Markov dynamics reveal overlapping fields and multidisciplinary journals</b> — •MARTIN ROSVALL
SYSM 1.3	Thu	10:30–11:00	H1	<b>Network algorithms for reputation and quality in scholarly data</b> — •MATÚŠ MEDO, MANUEL MARIANI, YI-CHENG ZHANG
SYSM 1.4	Thu	11:15–11:45	H1	<b>Modeling scientific networks in social media</b> — •CASSIDY SUGIMOTO
SYSM 1.5	Thu	11:45–12:15	H1	<b>Modeling scientific collaboration across multiple scales: from individuals to Europe</b> — •ALEXANDER PETERSEN

### Invited talks of the joint symposium Chimera States: Coherence-Incoherence Patterns in Complex Networks (SYCS)

See SYCS for the full program of the symposium.

SYCS 1.1	Tue	9:30–10:00	H1	<b>Theory far from infinity: chimera states without the thermodynamic limit</b> — •DANIEL ABRAMS
SYCS 1.2	Tue	10:00–10:30	H1	<b>Chimera patterns: Influence of topology, noise, and delay</b> — •ECKEHARD SCHÖLL
SYCS 1.3	Tue	10:30–11:00	H1	<b>Chimera states in quantum mechanics</b> — •VICTOR MANUEL BASTIDAS VALEN- LENCIA
SYCS 1.4	Tue	11:15–11:45	H1	<b>Synchronization in Populations of Chemical Oscillators: Phase Clusters and Chimeras</b> — •KENNETH SHOWALTER
SYCS 1.5	Tue	11:45–12:15	H1	<b>Epileptic seizures: chimeras in brain dynamics</b> — •KLAUS LEHNERTZ

## Sessions

BP 1.1–1.3	Sun	16:00–18:30	H16	<b>Tutorial: Evolutionary Dynamics and Applications to Biology, Social and Economic Systems (SOE/DY/BP/jDPG)</b>
BP 2.1–2.5	Mon	9:30–11:00	H43	<b>Physics of Cancer</b>
BP 3.1–3.8	Mon	9:30–12:15	H44	<b>Protein Structure and Dynamics</b>
BP 4.1–4.6	Mon	9:30–11:00	H45	<b>Colloids and Complex Fluids I (Joint Session BP/CPP/DY)</b>
BP 5.1–5.11	Mon	9:30–13:00	H51	<b>Colloids and Complex Fluids II (Joint Session CPP/DY/BP)</b>
BP 6.1–6.6	Mon	10:00–11:30	H36	<b>Networks: From Topology to Dynamics I (Joint Session SOE/DY/BP)</b>
BP 7.1–7.6	Mon	11:15–13:00	H45	<b>Coupled Problems in Biological Systems (Focus Session)</b>
BP 8.1–8.4	Mon	11:30–12:45	H43	<b>Bioimaging and Spectroscopy I</b>
BP 9.1–9.4	Mon	12:15–13:15	H36	<b>Evolutionary Game Theory (Joint Session SOE/DY/BP)</b>
BP 10.1–10.11	Mon	15:00–18:00	H42	<b>Colloids and Complex Fluids III (Joint Session CPP/DY/BP)</b>
BP 11.1–11.7	Mon	15:00–17:15	H43	<b>Bioimaging and Spectroscopy II</b>
BP 12.1–12.6	Mon	15:00–17:15	H45	<b>Single Molecule Biophysics</b>
BP 13.1–13.2	Mon	17:30–19:30	Poster C	<b>Posters - Anomalous Diffusion in Complex Environments</b>
BP 14.1–14.3	Mon	17:30–19:30	Poster C	<b>Posters - Biotechnology and Bioengineering</b>
BP 15.1–15.4	Mon	17:30–19:30	Poster C	<b>Posters - Complex Fluids and Soft Matter</b>
BP 16.1–16.10	Mon	17:30–19:30	Poster C	<b>Posters - Computational Biophysics</b>
BP 17.1–17.2	Mon	17:30–19:30	Poster C	<b>Posters - Coupled Problems in Biological Systems: Model Identification, Analysis and Predictions</b>
BP 18.1–18.6	Mon	17:30–19:30	Poster C	<b>Posters - DNA, RNA and Related Enzymes</b>
BP 19.1–19.11	Mon	17:30–19:30	Poster C	<b>Posters - Membranes and Vesicles</b>
BP 20.1–20.4	Mon	17:30–19:30	Poster C	<b>Posters - Molecular Dynamics</b>
BP 21.1–21.1	Mon	17:30–19:30	Poster C	<b>Posters - Nanoparticles, Nanocrystals and Composites</b>
BP 22.1–22.6	Mon	17:30–19:30	Poster C	<b>Posters - Neurosciences</b>
BP 23.1–23.5	Mon	17:30–19:30	Poster C	<b>Posters - Protein Structure and Dynamics</b>
BP 24.1–24.6	Mon	17:30–19:30	Poster C	<b>Posters - Single Molecule Biophysics</b>
BP 25.1–25.1	Mon	17:30–19:30	Poster C	<b>Posters - Systems Biology</b>
BP 26.1–26.5	Tue	9:30–12:15	H1	<b>Symposium - Chimera States: Coherence-Incoherence Patterns in Complex Networks (SYCS)</b>
BP 27.1–27.7	Tue	9:30–11:45	H43	<b>Computational Biophysics</b>
BP 28.1–28.8	Tue	9:30–12:30	H44	<b>Systems Biology &amp; Gene Expression and Signalling</b>
BP 29.1–29.10	Tue	9:30–12:45	H45	<b>Multicellular Systems</b>
BP 30.1–30.12	Tue	9:30–13:00	H47	<b>Microswimmers I (Joint Session with DY)</b>
BP 31.1–31.4	Tue	12:00–13:00	H43	<b>Statistical Physics of Biological Systems I (Joint Session with DY)</b>
BP 32.1–32.4	Tue	14:00–15:00	H36	<b>Chimera State: Symmetry breaking in dynamical networks (joint session SOE/DY/BP)</b>
BP 33.1–33.5	Tue	14:00–15:15	H46	<b>Colloids and Complex Fluids IV (Joint Session DY/BP/CPP)</b>
BP 34.1–34.6	Tue	14:00–15:30	H47	<b>Anomalous Diffusion (Joint Session with DY)</b>
BP 35.1–35.3	Tue	15:00–15:45	H36	<b>Networks: From Topology to Dynamics II (Joint Session SOE/DY/BP)</b>
BP 36.1–36.5	Wed	9:30–11:00	H43	<b>Molecular Dynamics (Focus Session)</b>
BP 37.1–37.10	Wed	9:30–12:45	H44	<b>Cell Mechanics and Migration</b>
BP 38.1–38.5	Wed	9:30–11:15	H45	<b>Neurosciences</b>
BP 39.1–39.11	Wed	9:30–12:45	H46	<b>Active Matter (Joint Session with DY)</b>
BP 40.1–40.4	Wed	11:30–12:30	H43	<b>Statistical Physics of Biological Systems II (Joint Session with DY)</b>
BP 41.1–41.6	Wed	11:30–13:00	H45	<b>Microswimmers II (Joint Session with DY)</b>
BP 42.1–42.11	Wed	15:00–18:15	H40	<b>Biomaterials and Biopolymers I (Joint Session CPP/MM/BP)</b>
BP 43.1–43.7	Wed	15:00–17:00	H43	<b>Cell Adhesion</b>
BP 44.1–44.6	Wed	15:00–16:45	H45	<b>Biotechnology &amp; Bioengineering</b>
BP 45.1–45.3	Wed	15:30–16:15	H46	<b>Statistical Physics in Biological Systems III (Joint Session with DY)</b>
BP 46.1–46.6	Wed	17:00–19:00	Poster C	<b>Posters - Biomaterials and Biopolymers</b>
BP 47.1–47.2	Wed	17:00–19:00	Poster C	<b>Posters - Active Matter</b>
BP 48.1–48.20	Wed	17:00–19:00	Poster C	<b>Posters - Bioimaging and Spectroscopy</b>
BP 49.1–49.21	Wed	17:00–19:00	Poster C	<b>Posters - Cell Mechanics and Migration &amp; Physics of Cancer</b>
BP 50.1–50.7	Wed	17:00–19:00	Poster C	<b>Posters - Cell Adhesion</b>
BP 51.1–51.5	Wed	17:00–19:00	Poster C	<b>Posters - Cytoskeletal Filaments</b>

BP 52.1–52.4	Wed	17:00–19:00	Poster C	<b>Posters - Multi-Cellular Systems</b>
BP 53.1–53.11	Wed	17:00–19:00	Poster C	<b>Posters - Statistical Physics of Biological Systems</b>
BP 54	Wed	19:00–20:00	H43	<b>BP Mitgliederversammlung (Annual General Meeting of the Biological Physics Division)</b>
BP 55.1–55.5	Thu	9:30–12:15	H1	<b>Symposium - Scientometric Maps and Dynamic Models of Science and Scientific Collaboration Networks (SYSM)</b>
BP 56.1–56.8	Thu	9:30–12:45	H37	<b>The Physics of Water Interactions with Biological Matter (Joint Focus Session with CPP)</b>
BP 57.1–57.10	Thu	9:30–12:45	H43	<b>Membranes and Vesicles I</b>
BP 58.1–58.11	Thu	9:30–13:00	H44	<b>Cytoskeletal Filaments</b>
BP 59.1–59.5	Thu	9:30–11:00	H45	<b>DNA, RNA and Related Enzymes</b>
BP 60.1–60.12	Thu	9:30–13:00	H46	<b>Pattern Formation (Joint Session with DY)</b>
BP 61.1–61.6	Thu	11:30–13:00	H45	<b>Anomalous Diffusion in Complex Environments (Focus Session)</b>
BP 62.1–62.5	Thu	11:45–13:00	H52	<b>Biomaterials and Biopolymers II (Joint Session MM/ CPP/ BP)</b>
BP 63.1–63.1	Thu	14:00–14:45	H15	<b>Plenary Talk of Ben Schuler</b>
BP 64.1–64.5	Thu	15:00–17:45	H15	<b>Symposium - Anomalous Diffusion in Complex Environments (SYAD)</b>
BP 65.1–65.4	Thu	15:00–16:15	H43	<b>Membranes and Vesicles II</b>
BP 66.1–66.5	Thu	15:00–16:15	H45	<b>Biomaterials and Biopolymers III (Joint Session BP/ CPP/ MM)</b>
BP 67.1–67.6	Thu	15:30–17:00	H47	<b>Networks: From Topology to Dynamics III (Joint Session DY/ SOE/ BP)</b>
BP 68.1–68.4	Thu	16:45–17:45	H43	<b>Networks - From Topology to Dynamics IV (Joint Session BP/ SOE/ DY)</b>

## BP Mitgliederversammlung (Annual General Meeting of the Biological Physics Division)

Wednesday 19:00–20:00 H43

- Poster Awards
- Report of the current speakers
- Lessons learned and spring meeting Dresden 2017
- Miscellaneous