# Program

**Wednesday, September 2**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:00 - 13:00</td>
<td>Registration and collection of workshop material</td>
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<tr>
<td>13:00 - 13:15</td>
<td>Rainer Erdmann, Berlin, Germany, Opening Remarks</td>
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**Session: Methods and techniques 1**

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<thead>
<tr>
<th>Time</th>
<th>Speaker/Institution</th>
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<tbody>
<tr>
<td>13:15 - 13:45</td>
<td>Jörg Enderlein, Göttingen, Germany&lt;br&gt;Cryo-Fluorescence Microscopy, Super-Resolution Optical Fluctuation Imaging, and Metal-Induced Energy Transfer</td>
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<td>13:45 - 14:05</td>
<td>Michael Metzger, Tübingen, Germany (Student Award)&lt;br&gt;Resolution enhancement for scanning microscopy by immersion at low temperature</td>
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<td>14:05 - 14:25</td>
<td>Alexey Chizhik, Göttingen, Germany&lt;br&gt;Photo-reactivation of luminescent centers in single SiO₂ nanoparticles</td>
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<td>14:25 - 14:45</td>
<td>Daryan Kempe, Aachen, Germany (Student Award)&lt;br&gt;Accurate fluorescence quantum yield determination by fluorescence correlation spectroscopy</td>
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<tr>
<td>14:45 - 15:20</td>
<td>COFFEE BREAK AND PRODUCT DEMONSTRATION</td>
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**Session: FRET/FCS**

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<tr>
<th>Time</th>
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<tr>
<td>15:20 - 15:50</td>
<td>Taekjip Ha, Urbana, United States (Invited Talk)&lt;br&gt;Ultrahigh resolution single molecule fluorescence-force spectroscopy and engineering of a superenzyme</td>
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<td>15:50 - 16:10</td>
<td>Dagmar Klostermeier, Muenster, Germany&lt;br&gt;Using smFRET towards understanding structure, function and dynamics of molecular machines: The role of conformational changes for DNA supercoiling by gyrase</td>
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<td>16:10 - 16:30</td>
<td>Ralf Kühnemuth, Düsseldorf, Germany&lt;br&gt;Quantitative experimental and theoretical investigation of diffusion of macromolecules through gel matrices by fluorescence methods</td>
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<td>16:30 - 16:50</td>
<td>Sven Schneider, Lübeck, Germany (Student Award)&lt;br&gt;Pressure unfolding of a model folding protein followed by smFRET</td>
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<td>16:50 – 17:10</td>
<td>Michael Schlief, Dresden, Germany&lt;br&gt;farFRET: Extending the range in single-molecule FRET experiments beyond 10 nanometer</td>
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<td>17:10 – 17:30</td>
<td>Daniela Wengerl, München, Germany (Student Award)&lt;br&gt;Studying the function of BAP in the nucleotide cycle of BiP by spFRET using MFD-PIE</td>
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<td>18:00 - …</td>
<td>WELCOME RECEPTION</td>
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Thursday, September 3

Session: Methods and techniques 2 Chair: Taekjip Ha

09:00 - 09:35 Philip Tinnefeld, Braunschweig, Germany (Invited Talk)
Nanophotonic Promises for Single-Molecule Detection

09:35 - 09:55 Zhiqin Chu, Stuttgart, Germany (Student Award)
Monitoring intracellular pH of living cells using nanodiamonds

09:55 - 10:15 Steve Blair, Salt Lake City, United States
UV fluorescence lifetime modification by Al and Mg plasmonic nanoapertures

10:15 - 10:35 André Klauss, Potsdam, Germany
Straightforward upgrade of a time-resolved confocal scanning microscope to a diffraction-unlimited STED nanoscope benefiting from time gating

10:35 - 11:10 COFFEE BREAK AND PRODUCT DEMONSTRATION

Session: Methods and techniques 3 Chair: Atsushi Miyawaki

11:10 - 11:40 Felix Ritort, Barcelona, Spain (Invited Talk)
Measuring binding affinities using force methods

11:40 - 12:00 Kristin Grußmayer, Heidelberg, Germany (Student Award)
Counting by Photon Statistics - Fluorescence Quantification based on Photon Antibunching

12:00 - 12:20 Alexander Wolf, Berlin, Germany (Student Award)
Diffusion Analysis of NAnoscopic Ensembles (DANAE): A tracking-free assessment for spectrally resolved diffusive modes of densely and inhomogeneously distributed particles

12:20 - 12:40 Malte Wachsmuth, Heidelberg, Germany
Large-scale FCS to assess molecular diffusion and chromatin interaction in vivo

12:40 - 12:50 GROUP PICTURE

12:50 - 14:00 LUNCH BREAK

Session: Biological applications 1 Chair: Felix Ritort

14:00 - 14:30 Atsushi Miyawaki, Saitama, Japan (Invited Talk)
Cruising inside X

14:30 - 14:50 Anne Plochowietz, Oxford, United Kingdom (Student Award)
Mobility and spatial distribution of transfer RNA (tRNA) in live bacteria using single-molecule tracking

14:50 - 15:10 Mario Schneider, Düsseldorf, Germany (Student Award)
Characterisation of the monomeric state of amyloid beta 42 with fluorescence-based techniques

15:10 - 15:30 David L.V. Bauer, Oxford, United Kingdom
Pulling it all Together: Single Molecule FRET Reports on Accurate Structure and Dynamics in Bacterial Transcription
15:30 - 15:50 Sinan Kilic, Lausanne, Switzerland (Student Award)
Multivalency and local competition of heterochromatin protein 1 governs
dynamic protein turnover in stable heterochromatin domains

15:50 - 16:10 COFFEE BREAK

16:10 - 18:40 POSTER SESSION AND PRODUCT DEMONSTRATION

20:00 - 23:00 DINNER

Friday, September 4

Session: Super-resolution 1 Chair: Katharina Gaus

09:00 - 09:35 Theo Lasser, Lausanne, Switzerland (Invited Talk)
Seeing is believing - Voir est saVoir

09:35 - 09:55 Huw Colin-York, Oxford, United Kingdom (Student Award)
Investigating the active role of mechanical force during T-cell activation by
super-resolved traction force microscopy

09:55 - 10:15 Jasper H. M. van der Velde, Groningen, Netherlands (Student Award)
Super-Resolution with Self-Healing Organic Fluorophores

10:15 - 10:35 Felix Koberling, Berlin, Germany
Advanced Pulse Pattern Generation and Fine Tuning for STED Microscopy

10:35 - 11:10 COFFEE BREAK

Session: Biological applications 2 Chair: Ingmar Schoen

11:10 - 11:40 Katharina Gaus, Sydney, Australia (Invited Talk)
Molecular insights into the regulation of T cell signalling

11:40 - 12:00 Michael Börsch, Jena, Germany
Motors, gears and controls of FoF1-ATP synthase monitored by single-molecule Förster
resonance energy transfer

12:00 - 12:20 Richard Börner, Zurich, Switzerland
A macromolecular crowding study of RNA folding and activity – polymer pore size matters!

12:20 - 12:40 Fabian Wehnekamp, München, Germany
3D Real-Time Orbital tracking in zebrafish embryos: High spatiotemporal
analysis of mitochondrial dynamics in neurons

12:40 - 13:00 Thomas Ruckelshausen, Saarbrücken, Germany
Darkfield hyperspectral imaging of Au-NPs in A549 cells

13:00 - 13:10 STUDENT AWARD PRESENTATION

13:10 - 14:20 LUNCH BREAK
14:20 - 14:50  **Ingmar Schoen, Zurich, Switzerland (Invited Talk)**  
What superresolution microscopy can teach us about biomolecular structures in fixed cell cultures

14:50 - 15:10  **Sebastian van de Linde, Würzburg, Germany**  
Quantitative Single-Molecule Localization Microscopy

15:10 - 15:30  **Dirk Hähnel, Göttingen, Germany**  
Filling the usability gap: Bioinformatics solutions for Image-Scanning Microscopy, Stochastic Optical Fluctuation Imaging, and Surface Single Molecule Experiments

15:30 - 15:50  **Chayan Kanti Nandi, Mandi, India**  
Single Molecule Blinking and Localization Based Super Resolution Imaging using Carbon Dots

15:50 - 16:00  CONCLUDING REMARKS by Taekjip Ha

16:00 -  END OF WORKSHOP