

# Program

## Tuesday, September 2

07:30 - 09:00 Registration and collection of workshop material

09:00 - 09:20 **Rainer Erdmann, Berlin, Germany**  
Opening Remarks

Session: Superresolution 1

Chair: Rainer Erdmann

09:20 - 10:05 **W. E. Moerner, Stanford, United States (Plenary Talk)**  
Single Molecules as Nanoscale Light Sources for Super-Resolution Imaging

10:05 - 10:25 **Mathias P. Clausen, Oxford, United Kingdom**  
Lipid hop diffusion in the plasma membrane explored by STED-FCS and single quantum dot tracking

10:25 - 10:45 **Peter J Walla, Braunschweig / Göttingen, Germany**  
Fluorescence nanoscopy by polarization modulation and polarization angle narrowing

10:45 - 11:20 COFFEE BREAK

Session: Superresolution 2

Chair: W.E. Moerner

11:20 - 11:50 **Markus Sauer, Würzburg, Germany (Invited Talk)**  
Eight Years of Single Molecule Localization Microscopy: From Concepts to Biological Impact

11:50 - 12:10 **Evelyn Ploetz, Groningen, Netherlands (Student Award)**  
Single-molecule FRET reveals the relation between conformational dynamics and transport in membrane-embedded ABC importers

12:10 - 12:30 **Marcelle König, Berlin, Germany**  
STED Made Easy: The STED Upgrade for the Time-resolved Confocal Microscope MicroTime 200

12:30 - 13:00 **Flash talk session 1**  
Antonio Aloï, Toby Bell, Lara Laparra Cuervo, Martin Lehmann, Sebastian Letschert, Simon Christoph Stein

Chair: Rainer Erdmann

13:00 - 14:10 LUNCH BREAK

Session: Technology 1

Chair: Markus Sauer

- 14:10 - 14:40      **Michel Orrit, Leiden, Netherlands (Invited Talk)**  
Single-molecule spectroscopy with poor emitters
- 14:40 - 15:10      **Jörg Enderlein, Göttingen, Germany (Invited Talk)**  
Single molecule electrodynamics: from spectroscopy to imaging
- 15:10 - 15:30      **Emilie Wientjes, Castelldefels, Spain**  
Strong antenna-enhanced fluorescence of a single light-harvesting complex shows photon anti-bunching
- 15:30 - 15:50      **Leonardo Menezes, Recife-PE, Brazil**  
Spatial mapping of absorption in nanoscale structures
- 15:50 - 16:10      **Edwin K.L. Yeow, Singapore, Singapore**  
Novel and Protein-Free Molecular Dyads and Triads for the Detection of Bile Salts and Antibiotics
- 16:10 - 16:40      **Flash talk session 2**      Chair: Felix Koberling  
Gustavo Fuertes, Andreas Grüter, Narain Karedla, Maria Khrenova, Jakub Kubiak, Ralf Kühnemuth
- 16:40 - 17:00      COFFEE BREAK
- 17:00 - 18:50      POSTER SESSION 1 and PRODUCT PRESENTATION
- 19:15 - ...      WELCOME RECEPTION (WISTA CORNER)

## Wednesday, September 3

Session: Superresolution 3

Chair: Sunney Xie

- 08:30 - 09:05      **Shimon Weiss**, Los Angeles, United States (Invited Talk)  
Inorganic voltage nanosensors
- 09:05 - 09:25      **Sebastian van de Linde**, Würzburg, Germany  
Quantitative Super-Resolution Imaging of Active Zone States
- 09:25 - 09:45      **Hussein Hamzeh**, Bonn, Germany (Student Award)  
*Super-resolution microscopy provides insights into mouse and sea urchin sperm*
- 09:45 - 10:05      **Christian Franke**, Würzburg, Germany (Student Award)  
*Quantitative super-resolution fluorescence microscopy of the nuclear pore complex with molecular resolution*
- 10:05 - 10:25      GROUP PICTURE
- 10:25 - 11:00      COFFEE BREAK and PRODUCT PRESENTATION

Session: Superresolution 4

Chair: Jörg Enderlein

- 11:00 - 11:30      **Christian Eggeling**, Oxford, UK (Invited Talk)  
Combining FCS and STED microscopy: Prospects and applications
- 11:30 - 11:50      **Susanne Beater**, Braunschweig, Germany (Student Award)  
DNA based transient binding for repetitive STED and other superresolution microscopy
- 11:50 - 12:10      **Kathrin Klehs**, Frankfurt, Germany (Student Award)  
Tuning the brightness of photoswitchable fluorophores for super-resolution microscopy
- 12:10 - 12:45      **Flash talk session 3**      Chair: Felix Koberling  
Thorben Cordes, Siddharth Ghosh, Simon Hennig, Jaime Ortega Arroyo, Liang Su, Jan Vogelsang
- 12:45 - 14:05      LUNCH BREAK

Open Afternoon

Chair: Rainer Erdmann

14:05 - 14:20

**Rainer Erdmann, Berlin, Germany**  
Welcome

14:20 - 14:45

**Jörg Enderlein, Göttingen, Germany**  
The Story of Single Molecule Fluorescence

14:45 - 15:40

**Stefan W. Hell, Göttingen, Germany (Keynote Talk)**  
Far-field optical nanoscopy: principles and recent advancements

15:40 - 16:10

**Sunney Xie, Cambridge, United States (Invited Talk)**  
Life at the Single Molecule Level

16:10 - 16:45

**Flash talk session 4** Chair: Felix Koberling  
Sarah Aufmolk, Florian Baumgart, Romain Laine, Jarno Mäkelä,  
Maria Ott, Thomas Stangl, Sudhaharan Thankiah

16:45 - 17:05

COFFEE BREAK

17:05 - ...

POSTER SESSION 2 and PRODUCT PRESENTATION

17:30 - ...

GET-TOGETHER WITH STED, BEER, PRETZELS, AND DONUTS

19:00

END

## Thursday, September 4

Session: FRET 1

Chair: Johan Hofkens

- 08:30 - 09:05 **William A. Eaton**, Bethesda, United States (Invited Talk)  
Protein Folding Transition Paths: Single Molecule Experiments, Theory and Simulations
- 09:05 - 09:25 **Franziska Zosel**, Zürich, Switzerland (Student Award)  
Probing the dynamics of intrinsically disordered proteins by combining single-molecule FRET and photoinduced electron transfer
- 09:25 - 09:45 **Anders Barth**, München, Germany (Student Award)  
Detection of Coordinated Motions in Proteins by Three-Color FRET: Theory of Three-Color Photon Distribution Analysis
- 09:45 - 10:05 **Hannes Neuweiler**, Würzburg, Germany  
Microsecond domain motions of a spider silk protein structural switch probed by PET-FCS
- 10:05 – 10:25 **Eleni Kallis**, Ulm, Germany (Student Award)  
Single molecule FRET experiments probing nucleosome stability
- 10:25 - 10:55 COFFEE BREAK and PRODUCT PRESENTATION

Session: Superresolution 5

Chair: Ben Schuler

- 10:55 - 11:40 **Toshio Yanagida**, Osaka, Japan (Plenary Talk)  
From single molecule fluctuation to muscle contraction: a Brownian model of A.F. Huxley's hypotheses
- 11:40 - 12:10 **Johan Hofkens**, Heverlee-Leuven, Belgium (Invited Talk)  
The power of one: what did we learn from single molecule studies?
- 12:10 - 12:30 **Edward S. Allgeyer**, New Haven, United States  
Two-Color Beam-Scanning TIRF STED Microscopy in Live Cells
- 12:30 - 12:50 **Iván Coto Hernández**, Genova, Italy (Student Award)  
Recent Advances In Gated CW-STED Microscopy
- 12:50 - 13:55 LUNCH BREAK

Session: FRET 2

Chair: William A. Eaton

- 13:55 - 14:25 **Benjamin Schuler**, Zurich, Switzerland (Invited Talk)  
Single-molecule spectroscopy of intrinsically disordered proteins
- 14:25 - 14:45 **Katherina Hemmen**, Düsseldorf, Germany (Student Award)  
Conformational fluctuations of Phage T4 Lysozyme under denaturing conditions: Deciphering energy landscape and intermediate structures

14:45 - 15:05

**Roman Tsukanov**, Beer Sheva, Israel (Student Award)

Conformational Dynamics of DNA Hairpins at Milliseconds Resolution  
Obtained from Analysis of Single-Molecule FRET Histograms

15:20

Departure (Boat Trip and Dinner), Transfer with busses

## Friday, September 5

Session: Technology 2

Chair: Manfred Auer

- 08:30 - 09:05      **Claus A. M. Seidel**, Düsseldorf, Germany (*Invited Talk*)  
A dynamic view on biomolecules by high-precision FRET
- 09:05 - 09:25      **Eyal Nir**, Beer Sheva, Israel  
Combining Microfluidics Technology and Single-Molecule Fluorescence to Operate and Study DNA Molecular Machines
- 09:25 - 09:45      **Weixing Li**, Goettingen, Germany (*Student Award*)  
Cryo-Fluorescence Microscopy of Single Molecules
- 09:45 - 10:05      **Gabi de Wit**, Oxford, United Kingdom (*Student Award*)  
Label-free observation and tracking of lipid nanodomains with interferometric scattering microscopy
- 10:05 - 10:25      **Enrico Pibiri**, Braunschweig, Germany (*Student Award*)  
Single-Molecule Positioning in Zeromode Waveguides by DNA Origami Nano-Adapters
- 10:25 - 11:00      COFFEE BREAK

Session: Superresolution / FCS 1

Chair: Thomas Schmidt

- 11:00 - 11:45      **Xiaowei Zhuang**, Cambridge, United States (*Plenary Talk*)  
Super-resolution fluorescence imaging with stochastic optical reconstruction microscopy
- 11:45 - 12:15      **Gerhard Schütz**, Wien, Austria (*Invited Talk*)  
Pulling before deciding - how T cells recognize their antigen
- 12:15 - 12:35      **Lorenzo Albertazzi**, Eindhoven, Netherlands  
Super Resolution Imaging of Synthetic Self-Assembled Systems
- 12:35 - 12:55      **Volodymyr Chmyrov**, Stockholm, Sweden (*Student Award*)  
Trans-cis isomerization of lipophilic dyes provides a measure of membrane microviscosity in biological membranes and in live cells.
- 12:55 - 14:05      LUNCH BREAK

Session: Superresolution / FCS 2

Chair: Claus Seidel

- 14:05 - 14:35      **Manfred Auer**, Edinburgh, United Kingdom (*Invited Talk*)  
A fully integrated target validation process based on confocal scanning, spectroscopy, and imaging
- 14:35 - 14:55      **Aleš Benda**, Sydney, Australia  
Self-calibrated, line-scan STED-FCS to quantify lipid dynamics in model and cell membranes

- 14:55 - 15:15      **Rudolf Rigler**, *Stockholm, Sweden*  
Multipoint FCS in 3D Analysis of Single Cells
- 15:15 - 15:35      **Stefan Wennmalm**, *Solna, Sweden*  
Sizing of 40 nm spots using a confocal LSM and Scanning Inverse FCS
- 15:35 - 15:45      STUDENT AWARD PRESENTATION
- 15:45 - 16:20      COFFEE BREAK

Session: Biological Applications

Chair: Gerhard Schütz

- 16:20 - 16:50      **Thomas Schmidt**, *Leiden, Netherlands (Invited Talk)*  
Imaging Cellular Signaling on Molecule at a Time
- 16:50 - 17:10      **Jens Michaelis**, *Ulm, Germany*  
Mechanistic insight into eukaryotic gene expression from single molecule experiments
- 17:10 - 17:30      **Lindsay W. Black**, *Baltimore, United States*  
DNA translocation mechanism of a viral packaging motor: five years of PicoQuantification
- 17:30 - 17:50      **Gregor Jung**, *Saarbruecken, Germany*  
Approaches to Single-Molecule Chemistry by Means of Fluorescence
- 17:50 - 18:00      CONCLUDING REMARKS, Manfred Auer
- 18:00                END OF WORKSHOP