

Mats Gustafsson Memorial Symposium on High Resolution Imaging

Sunday, May 20th

3:00 pm Check-in

6:00 pm Reception

7:00 pm Dinner

8:00 pm Session 1: Introduction

8:00 pm **David A. Agard**, HHMI/University of California, San Francisco
Welcome and introduction to the meeting

8:25 pm **Eric Betzig**, Janelia Farm Research Campus/HHMI
Bessel beam structured plane illumination microscopy

8:50 pm Refreshments available in Bob's Pub

Monday, May 21st

- 7:30 am Breakfast (*service ends at 8:45 am*)
- 9:00 am Session 2: Structured Illumination**
Chair: David Williams
- 9:00 am **Tony Wilson**, University of Oxford
Optical sectioning via structured illumination and structured detection
- 9:25 am **Frederick Lanni**, Carnegie Mellon University
TBD
- 9:50 am **Rainer Heintzmann**, Institute of Photonic Technology
Structured Illumination - Image processing and imaging deeper into dense samples
- 10:15 am Break
- 10:45 am Session 3: Widefield Imaging and Adaptive Optics**
Chair: Tony Wilson
- 10:45 am **David R. Williams**, University of Rochester
Functional imaging of retinal mosaics in the living eye
- 11:10 am **Zvi Kam**, Weizmann Institute of Science
Adaptive optical microscopy
- 11:35 am **Jason Swedlow**, University of Dundee
The open microscopy environment: Open image informatics for the biological sciences
- 12:00 pm **Peter Kner**, University of Georgia
Super-resolution imaging in thick samples
- 12:25 pm Lunch
- 2:00 pm Session 4: Three Dimensional Widefield Imaging**
Chair: Frederick Lanni
- 2:00 pm **Alan Greenaway**, Heriot Watt University
Multi-plane imaging and nanometric tracking in live-cell biology using wavefront sensors

Mats Gustafsson Memorial Symposium on High Resolution Imaging

- 2:25 pm **Lothar Schermelleh**, University of Oxford
Functional nuclear organization analyzed with 3D structured illumination microscopy
- 2:50 pm **David Riglar**, The Walter and Eliza Hall Institute of Medical Research
3D structured illumination microscopy analysis of malaria parasite infection of red blood cells
- 3:15 pm Break
- 3:45 pm Session 5: Mats' Research at Janelia**
Chair: Eric Betzig
- 3:45 pm **Sara Abrahamsson**, University of California, San Francisco
Fast and sensitive 3D imaging using aberration-corrected multifocus microscopy (MFM)
- 4:10 pm **Lin Shao**, Janelia Farm Research Campus/HHMI
Super-resolution 3D microscopy of live whole cells using structured illumination
- 4:35 pm **Reto Fiolka**, Janelia Farm Research Campus/HHMI
Multicolor live-cell imaging using structured illumination microscopy
- 5:00 pm **Hesper Rego**, Harvard School of Public Health/CSIR, South Africa
Nonlinear structured-illumination microscopy with a photoswitchable protein reveals cellular structures at 50-nm resolution
- 5:25 pm Poster Reception (*all Janelians are invited to attend*)
- 7:00 pm Dinner
- 8:00 pm Session 6: Distinguished Biologists**
Chair: David Agard
- 8:00 pm **Tom Kirchhausen**, Harvard Medical School
Imaging endocytosis
- 8:25 pm **Timothy Mitchison**, Harvard Medical School
Not so high resolution can be useful too
- 8:50 pm Refreshments available in Bob's Pub

Tuesday, May 22nd

- 7:30 am Breakfast (*service ends at 8:45 am*)
- 9:00 am Session 7: Live Imaging**
Chair: Tom Kirchhausen
- 9:00 am **Michael W. Davidson**, Florida State University
From polarized light to superresolution: A random walk through optical microscopy
- 9:25 am **Philipp J. Keller**, Janelia Farm Research Campus/HHMI
Reconstructing neural development
- 9:50 am **Jennifer Lippincott-Schwartz**, National Institutes of Health
TBD
- 10:15 am Break
- 10:45 am Session 8: Superresolution**
Chair: Rainer Heintzmann
- 10:45 am **Harald F. Hess**, Janelia Farm Research Campus/HHMI
3D imaging at the limits with photons and electrons
- 11:10 am **Stefan W. Hell**, Max Planck Institute for Biophysical Chemistry
Nanoscopy with focused light
- 11:35 am **Markus Sauer**, University of Wuerzburg
Super-resolution imaging with standard fluorescent probes
- 12:00 pm **Helge Ewers**, ETH Zurich
A simple, versatile method for GFP-based single molecule superresolution microscopy
- 12:25 pm Lunch
- 1:00 pm Tour (*optional - meet at reception*)
- 2:00 pm Session 9: Improving Superresolution: Labels and Algorithms**
Chair: Harald Hess
- 2:00 pm **Joerg Bewersdorf**, Yale University
Quantitative pupil analysis in STED microscopy using phase retrieval

Mats Gustafsson Memorial Symposium on High Resolution Imaging

- 2:25 pm **Jean-Christophe Olivo-Marin**, Institut Pasteur
Bayesian estimation for optimized structured illumination microscopy
- 2:50 pm **Joshua Larkin**, University of Oxford
A maximum-precision and closed-form solution for localizing diffraction-limited spots in noisy images; application to nuclear structure
- 3:15 pm **Arun Shivanandan**, ETH Zurich
Super-resolution imaging and image analysis of protein-protein interactions in membranes
- 3:40 pm Break
- 4:10 pm Session 10: Applications**
Chair: Stefan Hell
- 4:10 pm **Jie Xiao**, Johns Hopkins University
Bacterial cell division in superresolution
- 4:35 pm **Zachary B. Katz**, Albert Einstein College of Medicine
Cytoplasmic mRNA microenvironments investigated through super-resolution microscopy and single particle tracking
- 5:00 pm **Hideaki Mizuno**, Katholieke Universiteit Leuven
EGFR clustering away from cholesterol- or sphingolipid-enriched microdomains revealed by PALM/dSTORM
- 5:25 pm Poster Reception
- 7:00 pm Dinner
- 8:00 pm Discussion: What's Needed? What's Next?**
- 9:00 pm Conclusion of Meeting / Refreshments available in Bob's Pub

Mats Gustafsson Memorial Symposium on High Resolution Imaging

Wednesday, May 23rd

7:00 am	Breakfast (<i>service ends at 8:30 am</i>)
7:30 am	First shuttle to Dulles
8:30 am	Second shuttle to Dulles
9:30 am	Last shuttle to Dulles