

Sunday, November 17th

- 3:00 pm Check-in
- 6:00 pm Reception (*Lobby*)
- 6:30 pm Dinner
- 7:30 pm** **Keynote: Enrico Marchetti**, European Southern Observatory
Multi conjugate adaptive optics: Widening the sharpness in astronomical observations
- 8:30 pm Science Speed Dating! (*Lobby*)
- 9:30 pm Refreshments available at Bob's Pub

NOTE:
Meals are in the **Dining Room**
Talks are in the **Seminar Room**
Posters are in the **Lobby**

Monday, November 18th

- 7:30 am Breakfast (*service ends at 8:45am*)
- 9:00 am Session 1**
Chair: Meng Cui
- 9:00 am **Peter Kner**, University of Georgia
Adaptive optics for widefield microscopy
- 9:30 am **Martin J. Booth**, University of Oxford
Adaptive optics from microscopy to nanoscopy
- 10:00 am **Joel Kubby**, University of California, Santa Cruz
Adaptive optical microscopy using direct wavefront sensing
- 10:30 am Break
- 11:00 am Session 2**
Chair: Rafael Piestun
- 11:00 am **Jerome Mertz**, Boston University
Wavefront imaging with oblique fields
- 11:30 am **Na Ji**, Janelia Farm Research Campus/HHMI
Adaptive optics for in vivo brain imaging
- 12:00 pm **Stephen A. Boppart**, University of Illinois at Urbana-Champaign
Computed optical imaging techniques for resolution improvement and aberration correction in broadband interferometric microtomography
- 12:30 pm Lunch (*service ends at 1pm*)
- 2:00 pm Session 3**
Chair: Kishan Dholakia
- 2:00 pm **Kai Wang**, Janelia Farm Research Campus/HHMI
Adaptive optics: High resolution subcellular imaging throughout whole organisms
- 2:30 pm **Austin Roorda**, University of California, Berkeley
Cellular level imaging, tracking and stimulation in living eyes
- 3:00 pm **Donald Miller**, Indiana University Bloomington
3D retinal imaging using optical coherence tomography with adaptive optics

Shaping the Waves: Engineering Optical Wavefront for Biomedical Imaging

- 3:30 pm Break
- 4:00 pm Poster blitz! (5 min / 3 slides each)**
- 4:00 pm **Antonio Miguel Caravaca Aguirre**, University of Colorado at Boulder
Real-time light focusing through a bending multimode fiber
- 4:05 pm **Thomas Chaigne**, Institut Langevin
Controlling light non-invasively in scattering media using the photoacoustic transmission-matrix
- 4:10 pm **Mary Ann Go**, Australian National University
Spatio-temporal light modulation for photostimulation
- 4:15 pm **Alexandre Goy**, École Polytechnique Fédérale de Lausanne (EPFL)
Versatility of the digital confocal microscope
- 4:20 pm **Jung-Hoon Park**, Korea Advanced Institute of Science and Technology
Shaping the nearfields via farfield wavefront control
- 4:25 pm **Hari Paudel**, Boston University
Focusing polychromatic light through strongly scattering media
- 4:30 pm **Xiaodong Tao**, University of California, Santa Cruz
Interferometric focusing of guide-stars for direct wavefront sensing
- 4:35 pm **Yan Wang**, University of Toronto
Generalized antenna array theory for wavefront shaping: Achieving super-resolution beyond the diffraction limit
- 4:40 pm Poster Reception
- 6:30 pm Dinner
- 8:00 pm Refreshments available at Bob's Pub

Tuesday, November 19th

- 7:30 am Breakfast (*service ends at 8:45am*)
- 9:00 am Session 4**
Chair: Na Ji
- 9:00 am **Chris Xu**, Cornell University
Three-photon microscopy for in vivo deep tissue imaging
- 9:30 am **Wonshik Choi**, Korea University
Pixelation-free and real-time endoscopic imaging through a fiber bundle
- 10:00 am **Ori Katz**, Institut Langevin, ESPCI ParisTech
The transmission matrix of a complex medium: Focusing and beyond
- 10:30 am Break
- 11:00 am Session 5**
Chair: Martin J. Booth
- 11:00 am **Mathias Fink**, ESPCI ParisTech
Applications of time-reversal in biomedical imaging
- 11:30 am **Lihong Wang**, Washington University in St. Louis
Synergy between light and sound: Photoacoustic tomography and TRUE optical focusing
- 12:00 pm **Meng Cui**, Janelia Farm Research Campus/HHMI
Deep tissue fluorescence imaging
- 12:30 Lunch (*service ends at 1pm*)
- 1:15 pm Tour (*optional – meet at reception*)
- 2:15 pm Session 6**
Chair: Yaron Silberberg
- 2:15 pm **Eric Betzig**, Janelia Farm Research Campus/HHMI
Principles and applications of coherent structured light sheet microscopy
- 2:30 pm **Pablo Loza-Alvarez**, Institute of Photonic Sciences
Fast volumetric SPIM microscope with scanned light sheet

Shaping the Waves: Engineering Optical Wavefront for Biomedical Imaging

- 3:00 pm **Alexander Rohrbach**, University of Freiburg
Increasing beam penetration depth and image contrast in light-sheet microscopy using holographically shaped beams
- 3:30 pm Break
- 4:00 pm** **Session 7**
Chair: Donald Miller
- 4:00 pm **Sean Quirin**, Columbia University
Spatial light modulation microscopy with wavefront coding for two-photon 3D imaging of neural activity
- 4:15 pm **Benjamin Judkewitz**, California Institute of Technology
Speckle-scale focusing with time-reversal of variance-encoded light
- 4:30 pm **Rafael Piestun**, University of Colorado at Boulder
Scattering optics, from random to deterministic - limitations and opportunities
- 5:00 pm **Vincent Daria**, The Australian National University
Four-dimensional probing of neurons with light
- 5:15 pm **Laura Waller**, University of California, Berkeley
Optical coherence engineering
- 5:30 pm Poster Reception
- 7:00 pm Dinner
- 8:00 pm Refreshments available at Bob's Pub

Wednesday, November 20th

- 7:30 am Breakfast (*service ends at 8:45am*)
- 9:00 am Session 8**
Chair: Peter Kner
- 9:00 am **Claude Boccara**, ESPCI ParisTech
Optical tomography of biological tissue and wavefront control
- 9:30 am **Demetri Psaltis**, École Polytechnique Fédérale de Lausanne (EPFL)
Multimode fiber endoscopy
- 10:00 am **Yaron Silberberg**, Weizmann Institute of Science
Nonlinear imaging through turbid layers
- 10:30 am Break
- 11:00 am Session 9**
Chair: Chris Xu
- 11:00 am **Kishan Dholakia**, University of St. Andrews
Structured light for imaging
- 11:30 am **Valentina Emiliani**, Université Paris Descartes
Optogenetics in good shape
- 12:00 pm **Elizabeth C. Carroll**, University of California, Berkeley
Two-photon optogenetic control of glutamate signaling with tethered photoswitches
- 12:15 pm **Richard Conroy**, National Institute of Biomedical Imaging and Bioengineering
Challenges in biomedical imaging
- 12:30 pm Closing Discussion
- 12:40 pm Lunch & Departure
- 1:00 pm First shuttle to Dulles
2:00 pm Second shuttle to Dulles
3:00 pm Last shuttle to Dulles