

6th International Conference on Structural Analysis of Supramolecular Assemblies by Hybrid Methods (March 14-18, 2012)

February 6, 2012

PROGRAM

WEDNESDAY, MARCH 14

4:00-6:00 Meeting registration / check-in

5:00-6:00 Reception (Cedar House)

6:00-7:30 Dinner (Granhall)

Session I (Evening), Hybrid Methods for Biological Pathways

7:30-7:40 Welcome, **Phoebe L. Stewart**, Meeting Chair, Director Cleveland Center for Membrane and Structural Biology and Professor of Pharmacology, Case Western Reserve University, Cleveland, USA

7:40-7:45 Introduction, **Félix Rey**, Session Chair, Director of Virology, Institute Pasteur, Paris, France

7:45-8:45 **Wes Sundquist, KEYNOTE SPEAKER**
Professor and Co-Chair of Biochemistry, University of Utah, Salt Lake City, USA
The ESCRT pathway in HIV budding and cell division

8:45-11:00 Cash bar (Cedar House)

THURSDAY, MARCH 15

7:30-8:30 Breakfast (Granhall)

Session II (Morning), Hybrid Approaches to Dynamic Assemblies

8:30-8:35 Introduction, **Alasdair Steven**, Session Chair
Chief, Laboratory of Structural Biology Research, NIAMS, National Institutes of Health, Bethesda, USA

8:35-9:05 **Karolin Luger**, Platform Speaker
Professor of Biochemistry and Molecular Biology and Howard Hughes Medical Institute Investigator, Colorado State University, Fort Collins, USA
'Some folding required' - histone chaperones and nucleosome assembly

- 9:05-9:35 **Z. Hong Zhou**, Platform Speaker
Professor and Director Electron Imaging Center for Nanomachines,
University of California Los Angeles, Los Angeles, USA
Seeing evolution at atomic details: CryoEM studies of dsRNA viruses
- 9:35-9:50 Abstract Selected talk
- 9:50-10:05 Abstract Selected talk
- 10:05-10:35 Coffee Break
- 10:35-11:05 **Heidi E. Hamm**, Platform Speaker
Professor and Chair of Pharmacology, Vanderbilt University School of Medicine,
Nashville, USA
Mechanisms of receptor-mediated G protein activation
- 11:05-12:05 **Susan S. Taylor, KEYNOTE SPEAKER**
Professor of Chemistry and Biochemistry, and Pharmacology and Howard Hughes
Medical Institute Investigator, University of California San Diego, USA
TBA

12:05 Lunch (Granhall)

Poster Session I (Afternoon)

- 4:30-6:00 Poster Session I (Bay Room)
- 6:00-7:30 Dinner (Granhall)

Session III (Evening), Computational Approaches to Hybrid Analysis

- 7:30-7:35 Introduction, **Andrej Sali**, Session Chair
Professor of Bioengineering and Therapeutic Sciences, University of California at
San Francisco, USA
- 7:35-8:05 **Adrian Elcock**, Platform Speaker
Associate Professor of Biochemistry, University of Iowa, Iowa City, USA
Molecular simulation methods for modeling macromolecular behavior in vivo
- 8:05-8:35 **Steven Ludtke**, Platform Speaker
Associate Professor of Biochemistry and Molecular Biology, Baylor College of
Medicine, Houston, USA
Symmetric or asymmetric? Accurate image processing of pseudosymmetric objects
- 8:35-9:05 **Bridget Carragher**, Platform Speaker
Associate Professor of Cell Biology, The Scripps Research Institute, La Jolla, USA
EM automation: the next decade
- 9:05-11:00 Cash bar (Cedar House)

FRIDAY, MARCH 16

7:30-8:30 Breakfast (Granhall)

Session IV (Morning), Hybrid Approaches to Cell Biology

- 8:30-8:35 Introduction, **Ron A. Milligan**, Session Chair
Professor of Cell Biology, The Scripps Research Institute, La Jolla, USA
- 8:35-9:05 **Antonina Roll-Mecak**, Platform Speaker
Investigator, NINDS and NHLBI, National Institutes of Health, Bethesda, USA
Tales of tubulin tails: insights into the mechanism of tubulin modifying enzymes
- 9:05-9:35 **Takahide Kon**, Platform Speaker
Department of Macromolecular Science, Osaka University, Osaka, Japan
Structural and functional analysis of dynein motors
- 9:35-10:05 TBA
- 10:05-10:20 Abstract Selected Speaker
- 10:20-11:05 Coffee Break and Group Photo
- 11:05-11:35 **Luke M. Rice**, Platform Speaker
Assistant Professor of Biochemistry, Southwestern Medical Center at Dallas, Dallas, USA
Catch and Release: conformation-based mechanisms in a microtubule polymerase
- 11:35-11:50 Abstract Selected Speaker
- 11:50-12:05 Abstract Selected Speaker
- 12:05 Lunch (Granhall)

Workshop (Afternoon), Latest Advances in Hybrid Methods

- 4:30-4:35 Introduction, **Dorit Hanein**, Session Chair
Associate Professor of Bioinformatics and Systems Biology, Sanford Burnham Medical Research Institute, La Jolla, USA
- 4:35-4:50 Abstract Selected Speaker
- 4:50-5:05 Abstract Selected Speaker
- 5:05-5:30 **Pawel Penczek**, Platform Speaker
Professor of Biochemistry and Molecular Biology, Director of Structural Biology Imaging Center, The University of Texas, Houston, USA
Visualization of macromolecular variability by cryo-EM

5:30-5:55 **Art Olson**, Platform Speaker
Professor of Molecular Biology, The Scripps Research Institute, La Jolla, USA
Visualizing and interacting with the molecular cell

6:00-7:30 Dinner (Granhall)

Session V (Evening), Hybrid Approaches to Membrane Biology and Membrane Proteins

7:30-7:35 Introduction, **William Weis**, Session Chair
Professor of Structural Biology, Stanford University, Stanford, USA

7:35-8:05 **Axel T. Brunger**, Platform Speaker
Professor of Molecular and Cellular Physiology and Howard Hughes Medical Institute Investigator, Stanford University, School of Medicine, Stanford, USA
Single vesicle/molecule studies of calcium triggered synaptic vesicle fusion

8:05-8:35 **Alain R. Brisson**, Platform Speaker
Professor of Biochemistry, University of Bordeaux, Talence, France
The function of Annexin-A5 in cell membrane repair

8:35-9:05 **James H. Hurley**, Platform Speaker
Principal Investigator, Laboratory of Molecular Biology, NIDDK, National Institutes of Health, Bethesda, USA
Structure of the membrane budding ESCRT-I and -II supercomplex from SAXS, EPR, and single molecule FRET

9:05-11:00 Cash bar (Cedar House)

SATURDAY, MARCH 17

7:00-8:30 Breakfast (Granhall)

Session VI (Morning), New Structural Characterization Methods and PSI Biology

8:30-8:35 Introduction, **Wah Chiu**, Session Chair
Director, National Center for Macromolecular Imaging, Baylor College of Medicine, Houston, USA

8:35-9:05 **Bo Huang**, Platform Speaker
Assistant Professor of Pharmaceutical Chemistry, Biochemistry and Biophysics, University of California, San Francisco, USA
Molecular complexes under the light: super-resolution microscopy

9:05-9:35 **Bob Stroud**, Platform Speaker
Professor of Biochemistry & Biophysics and Pharmaceutical Chemistry, University of California San Francisco, San Francisco, USA
PSI biology and uncovering molecular mechanisms of biological processes

- 9:35-9:50 Abstract Selected Speaker
- 9:50-10:05 Abstract Selected Speaker
- 10:05-10:35 Coffee Break
- 10:35-11:05 **Katherine Henzler-Wildman**, Platform Speaker
Assistant Professor of Biochemistry and Molecular Biophysics, Washington University in St. Louis, School of Medicine, St. Louis, USA
Conformational exchange and the mechanism of multidrug resistant transport by EmrE
- 11:05-11:35 **Brian T. Chait**, Platform Speaker
Professor, Laboratory of Mass Spectrometry and Gaseous Ion Chemistry, The Rockefeller University, New York, USA
Mass Spectrometry as a tool for probing macromolecular assemblies
- 11:35-11:50 Abstract Selected Speaker
- 11:50-12:05 Abstract Selected Speaker
- 12:05 Lunch (Granhall)

Poster Session II (Afternoon)

- 4:30-6:00 Poster Session II (Bay Room)
- 6:00-7:30 Dinner (Granhall)

Session VII (Evening), Hybrid Approaches for Increasing Resolution and Probing Conformational Change

- 7:30-7:45 Introduction, **Michael Rossmann**, Session Chair
Professor of Biological Sciences, Purdue University, West Lafayette, USA
Vision for the future of hybrid structural methods
- 7:45-8:15 **Shimon Weiss**, Platform Speaker
Professor of Chemistry and Biochemistry, Physical Chemistry, and Physiology, University of California Los Angeles, Los Angeles, USA
Advances in Superresolution Optical Fluctuation Imaging (SOFI)
- 8:15-8:45 **Toshio Ando**, Platform Speaker
Professor of Mathematics and Physics, Kanazawa University, Kanazawa, Japan
Current state of high-speed AFM: its advantages and limitations
- 8:45-12:00 Cash Bar/Social Time (Cedar House)

SUNDAY, MARCH 18

7:00-9:00 Breakfast (Granhall)

Departures