



Image Analysis Challenges in Molecular Microscopy

January 28 – February 1, 2008

ORGANIZING COMMITTEE: GUILLERMO SAPIRO, CHAIR (UNIVERSITY OF MINNESOTA, TWIN CITIES); ALBERTO BARTESAGHI (NIH); JACQUELINE MILNE (NIH); SRIRAM SUBRAMANIAM (NIH)

Scientific Overview

Understanding the hierarchical organization of molecules, multi-protein assemblies, organelles and networks within the interior of a eukaryotic cell is a challenge of fundamental interest in cell biology. A wide variety of microscopic and spectroscopic methods already exist for imaging intact cells and their components: modern fluorescence microscopic methods provide powerful tools for imaging at spatial resolutions in the micron range, while emerging methods in electron microscopy can be used to image the arrangement of protein assemblies at resolutions of 1 nm or better. To take advantage of these rapid advances in imaging technology, it is critical to develop and apply advanced computational strategies for image processing that can cope both with the volume and complexity of the data. This conference seeks to bring together leaders at this interdisciplinary interface of image processing and stimulate new partnerships to address computational problems at this exciting frontier of cell biology. The one-week meeting will bring together biologists, physicists, mathematicians and specialists in microscopy and image analysis.

Confirmed Speakers

Chandrajit Bajaj (University of Texas at Austin); **Alberto Bartesaghi** (National Institutes of Health (NIH)); **Gregory Beylkin** (University of Colorado at Boulder); **Jose-Maria Carazo** (Centro Nacional de Biotecnologia); **Ronald DeVore** (University of South Carolina); **Adel Faridani** (Oregon State University); **Achilleas Frangakis** (EMBL (European Molecular Biology Laboratory)); **Joachim Frank** (SUNY Albany); **Paul French** (Imperial College); **Gabor Herman** (City University of New York (CUNY)); **John Kaufhold** (Science Applications International Corporation (SAIC)); **Jelena Kovavcevic** (Carnegie-Mellon University); **Steve Ludtke** (Baylor College of Medicine); **Francois Meyer** (University of Colorado, Boulder); **Jacqueline Milne** (National Institutes of Health (NIH)); **Robert Murphy** (Carnegie-Mellon University); **Frank Natterer** (Westfälische Wilhelms-Universität Münster); **Pawel Penczek** (University of Texas Health Science Center at Houston); **Jerry Prince** (Johns Hopkins University); **Martin Rumpf** (Rheinische Friedrich-Wilhelms-Universität Bonn); **Yoel Shkolnisky** (Yale University); **Fred Sigworth** (Yale University); **Phoebe Stewart** (Vanderbilt University); **Sriram Subramaniam** (National Institutes of Health (NIH)); **Michael Unser** (École Polytechnique Fédérale de Lausanne (EPFL)); **Hanspeter Winkler** (Florida State University); **Hong Zhou** (University of Texas Health Science Center at Houston)

Participation

Additional information about this workshop including links to register and to apply for funding, can be found on the webpage listed below. Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM's mission, and we welcome their applications.

www.ipam.ucla.edu/programs/imm2008



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