

## Diffraction Microscopy, Holography and Ptychography using Coherent Beams

June 6 & 7, 2011

Robert Purcell Conference Center, Cornell University, Ithaca NY

**The purpose:**

To assess the state-of-the-art in the use of hard, highly-coherent x-ray beams (1) to determine the structure of non-periodic samples with resolution beyond the limitations of x-ray focusing optics and (2) to explore the unique capabilities and opportunities of imaging with coherent x-rays.

The emphasis is on new approaches enabled by the coherent, hard x-ray beams that will be possible with emerging quasi-continuous x-ray sources.

**Harald Ade**, North Carolina State University

*"Spectromicroscopy, Resonant Scattering, Possible Extensions to Ptychographic Imaging"*

**Don Bilderback**, Cornell University

*"Energy Recovery Linac (ERL) and Ultimate Storage Ring (USR) Properties"*

**Jim Fienup**, University of Rochester

*"X-ray Coherent Diffractive Imaging with an Extended Reference"*

**Sol Gruner**, Cornell University

*"X-ray Detectors: State-of-the-art & Future Possibilities"*

**Ross Harder**, Advanced Photon Source

*"Probing Strain and Defects in Single Crystals with Coherent X-ray Diffraction"*

**Chris Jacobsen**, Northwestern University

*"Imaging with Coherent Beams: let's not do it in a vacuum"*

**Chae Un Kim**, Cornell University

*"Cryopreservation of Structural Integrity under High Pressure"*

**Stefano Marchesini**, Lawrence Berkeley National Laboratory

*"High-efficiency Fourier Holography with Uniformly Redundant Arrays" [tentative]*

**Ian McNulty**, Advanced Photon Source

*"Resonant Coherent X-ray Imaging"*

**John Miao**, University of California, Los Angeles

*"Three-Dimensional Coherent Diffraction Imaging of Materials and Cells"*

**Yoshinori Nishino**, Hokkaido University

*"Imaging Cellular Organelles"*

**Garth Williams**, Linac Coherent Light Source

*"Coherent Imaging Without a Laser: getting the most bang for your electrons"*

**David Shapiro**, National Synchrotron Light Source II

*"High-resolution Imaging of Biological Specimens"*

**Qun Shen**, National Synchrotron Light Source II

*"New Opportunities with Hard X-ray Diffraction Limited Sources"*

**Oleg Shpyrko**, University of California, San Diego

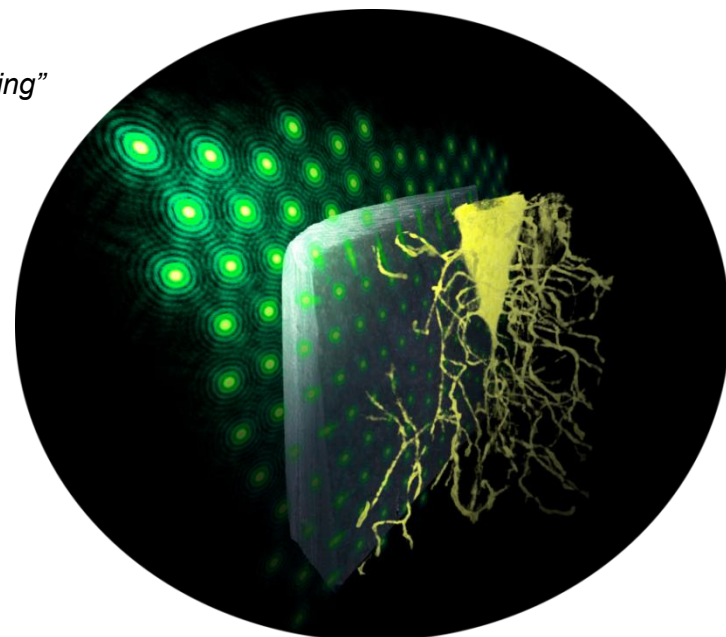
*"Magnetic Domains and Dynamics"*

**Pierre Thibault**, Technische Universität München

*"Ptychography in 2D and 3D"*

**Ivan Vartaniants**, Deutsches Elektronen-Synchrotron

*"Coherent Diffractive Imaging and Determining Structural Properties from Cross-correlation Analysis"*



Courtesy of P. Thibault



**Organizers:**

**Janos Kirz** (Lawrence Berkeley National Lab),  
**Qun Shen** (Brookhaven National Lab),  
**Darren Dale** (Cornell University)



Go to [http://erl.chess.cornell.edu/gatherings/2011\\_Workshops/index.htm](http://erl.chess.cornell.edu/gatherings/2011_Workshops/index.htm)

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