



5th International Symposium on Diffraction Structural Biology

ISDSB2016

August 7–10, 2016
Knoxville, Tennessee, USA

This symposium will report on the latest discoveries in structural biology using X-ray, neutron, and electron diffraction, and complementary techniques such as small-angle scattering, nuclear magnetic resonance spectroscopy, electron microscopy, and advanced computational approaches. Scientific insights at the molecular level allow structure guided drug discovery and protein engineering for improved biocatalysis. This basic research is important for supporting applications in the pharmaceutical industry and for new, sustainable, and environmentally friendly approaches to the production of chemical reagents and biofuels.

Discoveries in structural biology are accelerated by the availability of advanced research user facilities and new methods and technologies. In this symposium, we will cover the latest developments in electron, photon, and neutron sources and in associated methods and instrumentation.

Covered Topics

Bioenergy
Drug Design
Enzyme Mechanism and Allostery
Macromolecular Complexes
Membranes
Membrane Proteins
Sources and Facilities

Workshops

Saturday, August 6, 2016

Neutron Protein Crystallography

Lectures and practical instruction on neutron structure refinement using PHENIX. Overview of MaNDi and IMAGINE neutron diffractometers at Oak Ridge National Laboratory.

Small-Angle Neutron Scattering

Lectures and tutorials will introduce basic small angle scattering techniques and related computational tools with emphasis on how to integrate molecular simulations with experiments.

Tours of International User Facilities at Oak Ridge National Laboratory

- High Flux Isotope Reactor
- Spallation Neutron Source
- Titan supercomputer

Executive Committee

Paul Langan, Oak Ridge National Laboratory
Trevor Forsyth, Institut Laue-Langevin
John Helliwell, University of Manchester
Jack Johnson, Scripps Research Institute
Sean McSweeney, Brookhaven National Laboratory
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Nori Yasuoaka, Emeritus Professor of Himeji Institute of Technology

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For more information, visit: conference.sns.gov/event/2