



The 12th International Conference on Biology and Synchrotron Radiation (BSR 2016) - August 21, 24, 2016  
Panofsky Auditorium (SUSB - Building 53) at SLAC National Accelerator Laboratory, Menlo Park, CA, USA

<b>Sunday, August 21, 2016</b>	
15:00-17:00	Arrival and Registration
17:00-19:00	Reception
<b>Monday, August 22, 2016</b>	
08:15-08:30	Soichi Wakatsuki, Stephen Burley, Mike Dunne, Kelly Gaffney, and Henry van den Bedem <b>Welcome</b>
<b>Membrane Proteins (Chair: Poul Nissen)</b>	
08:30-08:35	Poul Nissen, Aarhus University <b>Introduction</b>
08:35-08:55	Zhi-Jie Liu, iHuman Institute <b>Structural and functional studies of human GPCRs</b>
08:55-09:15	Brian Kobilka, Stanford University <b>The dynamic process of G protein activation</b>
09:15-09:35	Irmgard Sinning, Heidelberg University <b>Regulation of protein targeting: when SRP meets the ribosome</b>
09:35-09:55	Jian-Ren Shen, Okayama University <b>High resolution structure of photosystem II and the mechanism of photosynthetic water-splitting</b>
09:55-10:15	Liz Carpenter, University of Oxford <b>Structure and function of K2P ion channels from synchrotron data from Diamond and serial femtosecond crystallography at LCLS</b>
10:15-10:30	Alexander Kintzer, UCSF <b>Structure, inhibition, and regulation of a two-pore channel TPC1</b>
10:30-11:00	<i>Break / Group Photo</i>
<b>Macromolecular Complexes (Chair: Bill Weis)</b>	
11:00-11:05	Bill Weis, Stanford University <b>Introduction</b>
11:05-11:25	Osamu Nureki, University of Tokyo <b>Structure-based development of genome-editing tool, CRISPR-Cas9 towards medical applications</b>
11:25-11:45	Richard Garratt, University of São Paulo <b>Septins, a molecular jigsaw</b>
11:45-12:05	Yvonne Jones, University of Oxford <b>Cell surface signaling systems, structural insights in developmental biology</b>
12:05-12:25	Jim Hurley, UC Berkeley <b>Structure-based piecing together of the Type III secretion system puzzle</b>
12:25-12:45	Natalie Strynadka, University of British Columbia <b>Structural basis for Epstein-Barr virus host cell tropism mediated by gp42 and gHgL entry glycoproteins</b>
12:45-13:00	Karthik Sathiyamoorthy, Stanford University

13:00-14:30	Lunch Break/Poster Setup		For those that pre-paid for lunch, it is available in Trinity Room across from Panofsky Auditorium. For those that did not pre-pay for lunch, food is available for purchase at SLAC Café or Starbucks by Stanford Guest House.
14:30-16:00	Poster Session 1		
<b>Hybrid Methods (Chair: Robert McKenna)</b>			
16:00-16:10	Robert McKenna, University of Florida		Introduction
16:10-16:30	Gabriel Waksman, University College London/Birkbeck		Structural and molecular biology of bacterial secretion systems
16:30-16:50	Jill Trehwella, University of Sydney		Small-angle scattering: an effective constraint in modelling complex biomolecular structures
16:50-17:10	Mike Hough, University of Essex		Fingerprinting redox and ligand states in protein crystals: applications for validation and determining structural movies
17:10-17:30	Flora Meilleur, Oak Ridge National Laboratory		Radiation damage free structural studies of cellulytic redox enzymes using neutron scattering and diffraction
17:30-17:50	Martin Beck, EMBL Heidelberg		<i>In situ</i> structural analysis of the human nuclear pore complex
17:50-18:10	Hélène Démené, CNRS		Towards a mechanistic understanding of the opioid mu receptor activation
18:10-18:30	Orion Shih, NSRRC		Linear oligomerization process of BAX revealed from coexisting intermediates in solution
<b>Tuesday, August 23, 2016</b>			
<b>Bioinformatics and Computing (Chair: Helen Berman)</b>			
08:30-08:35	Helen Berman, Rutgers University - Introduction		Introduction
08:35-08:55	Michael Levitt, Stanford University School of Medicine		Combinatorial methods solve a difficult structural problem to reveal how chaperonins work in eukaryotes
08:55-09:15	Christine Orengo, University College London		CATH-FunFams: New domain families to explore protein structure and function space
09:15-09:35	Paul Adams, Lawrence Berkeley National Laboratory		New methods for low resolution structure refinement
09:35-09:55	Dan Rigden, University of Liverpool		Exploiting structural bioinformatics for unconventional molecular replacement
09:55-10:15	Wladek Minor, University of Virginia		High throughput computing on high output synchrotron facilities
10:15-10:30	Daniel Franke, EMBL-Hamburg		Rapid shape classification of biological macromolecules from small angle x-ray scattering data
10:30-11:00	Break		
<b>Science with Upgraded SRS (Chair: Stefan Vogt)</b>			
11:00-11:10	Stefan Vogt, Argonne National Laboratory		Introduction
11:10-11:30	Pieter Glatzel, ESRF		Hard X-ray photon-in/photon-out spectroscopy at ESRF-EBS
11:30-11:50	Marjolein Thunnissen, MAX IV Laboratory		Possibilities for the life sciences at the first diffraction limited light-source MAX IV
11:50-12:10	Gayle Woloschak, Northwestern University		Upgrading X-ray fluorescence imaging
12:10-12:30	Lin Yang, Brookhaven National Laboratory		The life science x-ray scattering (LiX) beamline at NSLS-II
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14:00-15:30	Poster Session 2		
<b>Industrial or Pharmaceutical Applications (Chair: Nigel Walker)</b>			

16:00-16:10	Nigel Walker, Molecular Consulting - Introduction	The application of structural biology to pharmaceutical drug discovery
16:10-16:30	Benjamin Bax, GlaxoSmithKline, UK	How is movement coupled to catalysis in DNA gyrase?
16:30-16:50	Chun-Wa Chung, GlaxoSmithKline R&D, UK	How crystallography can (and can't) help us find drugs
16:50-17:10	Avni Bhatt, University of Florida	Crystallographic insight into enhanced catalytic activity of carbonic anhydrase II using "activating" ligands
17:10-19:00	SLAC Tour - Pre-registration required	
19:00-22:00	BBQ Dinner - Pre-registration required	
<b>Wednesday, August 24, 2016</b>		
<b>X-ray/IR Imaging/SR-CDI (Chair: Chris Jacobsen)</b>		
08:30-08:35	Chris Jacobsen, Argonne National Laboratory	Introduction
08:35-08:55	Tanja Dučić, CELLS-ALBA	Multimodal synchrotron spectro-microscopy for elucidation cellular disorders in neuro-degenerative diseases
08:55-09:15	Liz Duke, Diamond Light Source	Cryo soft x-ray microscopy: new opportunities for structural biology
09:15-09:35	Patrick La Riviere, University of Chicago	Development of "color" x-ray histology using multiple metal stains and multi-energy synchrotron CT
09:35-09:55	Andreas Menzel, Paul Scherrer Institute	Bio-imaging using x-ray ptychography - the method, recent advances, and applications
09:55-10:15	Carol Hirschmugl, University of Wisconsin - Milwaukee	Rapid 2D and 3D IR imaging applied to biologically and chemically complex systems
10:15-10:30	Michael Martin, LBNL	Biological SINS: Broadband synchrotron infrared nano-spectroscopy of biological materials
10:30-11:00	Break	
<b>Dynamics (Chair: Keith Moffat)</b>		
11:00-11:05	Keith Moffat, University of Chicago	Introduction
11:05-11:25	Marius Schmidt, University of Wisconsin - Milwaukee	Ultrafast dynamics in proteins investigated by time-resolved serial femtosecond crystallography
11:25-11:45	Lois Pollack, Cornell University	Time-resolved studies: SAXS of protein-DNA complexes and mixing jets for XFELs
11:45-12:05	Rajmund Mokso, MAX IV Laboratory	Fast tomographic microscopy to capture the dynamics of life
12:05-12:25	Doeke Hekstra, UT Southwestern	Probing the mechanics of molecular machines with electric fields and X-rays
12:25-12:45	James Fraser, UC San Francisco	Birth of the cool: multitemperature multiconformer x-ray crystallography
12:45-13:00	Daniel Keedy, UCSF	Multitemperature synchrotron crystallography and ligand scanning reveal novel allosteric modulators of the therapeutic target PTP1B
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14:30-16:00	Poster Session 3	
<b>7 Years of XFEL in Structural Biology (Chair: Janet Smith)</b>		
16:00-16:05	Chi-Chang Kao, SLAC National Accelerator Laboratory	
16:05-16:10	Janet Smith, University of Michigan	Introduction
16:10-16:30	Richard Neutze, University of Gothenburg	Time-resolved serial femtosecond crystallography studies of bacteriorhodopsin - a light-driven proton pump.

16:30-16:50	Ilme Schlichting, Max Planck Institute for Medical Research	Phasing serial femtosecond crystallography data
16:50-17:10	Henry Chapman, DESY	Macromolecular diffractive imaging using disordered crystals
17:10-17:30	Axel Brunger, Stanford University	XFEL crystal structure of the Synaptotagmin-1 : SNARE complex
17:30-17:50	So Iwata, RIKEN SPring-8 Center/Kyoto University	Macromolecular crystallography at SACLA
17:50-18:10	Andy Aquila, SLAC National Accelerator Laboratory	Single particle imaging at the Linac Coherent Light Source
18:10-18:30	Jan Kern, LBNL	Mechanism of water oxidation in photosystem II studied by room temperature fs x-ray crystallography and spectroscopy
18:30-19:00	Soichi Wakatsuki and Stephen Burley	Closing Remarks