

International Symposium on Structure Biology for Drug Discovery@SwissFEL

Paul Scherrer Institute, Auditorium, 5232 Villigen, Switzerland

June 25th -27th 2019

AGENDA		
Tuesday, June, 25th		
09.00-10.30	Registration	
10.30	Opening/Welcome words from Thierry Strässle (Director of PSI)	
Session 1 – Structures and Function at FELS (Chair: Michael Hennig, leadXpro AG)		
10.45-11.30	Introduction Keynote: Time resolved serial fs crystallography towards molecular movies of biomolecules "in action"	Petra Fromme (Arizona State University)
11.30-12.00	Exploring GPCR and Membrane Protein Dynamics with X-ray Free-Electron Lasers and cryo-EM	Gebhard Schertler (ETHZ/PSI)
12.00-13.30	LUNCH	
Session 1 – Structures and Function at FELS (Chair: Herbert Nar, Boehringer Ingelheim)		
13.30-14.15	Perspectives of using serial femtosecond crystallography in drug discovery	Vadim Cherezov (University of Southern California)
14.15-14.45	Emerging opportunities for structural biology in drug discovery	Stephen Soisson (Merck and Co., Inc. West Point, PA, USA)
14.45-15.15	COFFEE BREAK	
Session 1 – Structures and Function at FELS (Chair: Matthias Frech, Merck KGaA)		
15.15-16.00	Time resolved structural biology - Bacteriorhodopsin paves the way to a dynamic future	Tobias Weinert (PSI)
16.00-16.30	Observation of conformational switching by laser-induced pH jump using time-resolved serial femtosecond crystallography	Ji-Hye Lee (University of Korea)
16.30-17.00	Costs and benefits of experimentally phasing the diffracted electron wave	Jan Pieter Abrahams (University of Basel/ PSI)

Wednesday, June, 26th		
Session 2 – Drug Discovery with EM & X-ray (Chair: Sandra Jacob-Cowan, Novartis Pharma)		
09.00-09.45	Keynote: Cryo-EM: A (new) tool for drug discovery at Novartis	Christian Wiesmann (Novartis Pharma)
09.45-10.15	An embarrassment of riches in the Golden Age of Structure Based Drug Design	Jim Kiefer (Genentech)
10.15-10.45	Structures of G protein coupled receptor (GPCR) complexes by electron cryo-microscopy	Javier Garcia-Nafria (MCR Laboratory of Molecular Biology)
10.45-11.15	COFFEE BREAK	
Session 2 – Structure based Drug Discovery enabled by x-ray Crystallography on GPCR's (Chair: Roger Benoit, PSI)		
11.15-11.45	Uncovering the MOA of GPCR ligands through structural and biophysical studies	Rob Cooke (Heptares)
11.45-12.15	Serial crystallography enables the structure determination of membrane protein drug target	Robert Cheng (leadXpro AG)
12.15-13.45	LUNCH	
Session 2 – Electron Diffraction (Chair: Michel Steinmetz, PSI)		
13.45-14.15	Microfluidic Sample Preparation for EM: Protein Isolation, High-Resolution cryo-EM, and 'Differential Visual Proteomics'	Thomas Braun (University of Basel)
14.15-14.45	Electron Diffraction of organic molecules	Gustavo Santiso-Quiñones (Crystallise! AG)
14.45- 15.15	Novel accelerators for X-ray generation and electron diffraction	Rasmus Ischebeck (PSI)
15.30-17.30	VISIT TO SWISSFEL AND SLS (OPTIONAL)	
17.30-18.30	Special Talk: Life science studies using XFEL radiation: an historical overview and future outlook	Richard Neutze (University of Gothenburg)
19.00	DINNER	

Thursday, June, 27th**Session 3 – Method & Instrumentation Developments (Chair: Rafael Abela, leadXpro AG)**

09.00-09.45	Keynote: Serial crystallography and diffraction with X-ray FELs	Henry Chapman (CFEL)
09.45-10.15	SPIND-TC: First Auto-Indexer for Two Color Diffraction Patterns	Xuanxuan Li (Beijing Computational Science Research Center)
10.15-10.45	SwissMX: Efficient Fixed Target Femtosecond Macromolecular Crystallography at SwissFEL	Isabelle Martiel (PSI)
10.45-11.15	COFFEE BREAK	
Session 3 – Method & Instrumentation Developments (Chair: Oliver Bunk, PSI)		
11.15-11.45	Detectors for XFELs	Bernd Schmitt (PSI)
11.45-12.15	Serial Crystallography – Methods development for time resolved Structural Biology and Drug Discovery	Dominik Oberthuer (DESY)
12.15-12.45	Time-resolved SFX of metalloenzymes	Allen Orville (MX – Diamond Light Source)
12.45	Closing remarks and end of the Symposium	