

SCHEDULE

2025 West Coast Structural Biology Workshop March 23rd – 26th Asilomar, California

SUNDAY

Check in & Registration **4:00 – 6:00 PM** **Room check-in at the Asilomar Social Hall.
Pick up your name badge and program.**

Dinner **6:00 – 7:00 PM** **Crocker Dining Hall**

[All talks to be held in Chapel Hall.]

Welcome **7:00 – 7:15 PM** **Welcome and Introduction**

SPONSOR SESSION **7:15 – 7:45 PM** **Short Talks by Sponsors**
Chair: Mike Thompson, UC Merced

1. **Joyce Frank, *MITeGen*** Developments in Sample Preparation and Handling Technology for Crystallography and Cryo-EM.
2. **Matthew Joens, *ThermoFisher*** The future of lamella production.

KEYNOTE **7:45 – 9:00 PM** **KEYNOTE presentation by Dr. Junko Yano**
"Capturing the Sequence of Events During the Catalytic Reaction using XFELs"

Reception **9:00 – 11:00 PM** **Drinks and Snacks – Chapel Hall**

MONDAY

Breakfast **7:30 – 8:45 AM** **Crocker Dining Hall**

SESSION 1 **9:00 – 10:15 AM** **The Molecular Details of Host-Pathogen Interactions**
Chair: Joshua Rodriguez, UC Merced

1. **David Dinh, *UC Irvine*** X-ray crystal structure of the minimal CRISPR polymerase (mCpol) defense system protein from *Klebsiella pneumoniae* strain KP67.
2. **Nathaniel Burman, *Montana State U*** Reverse transcriptase generates an extra-chromosomal DNA that is central to anti-viral defense.
3. **Rebecca Schneider, *U of Illinois*** Structural Characterization of Avian Secretory Immunoglobulin A Provides Insight On Host Response To Avian Influenza.

Break **10:15 – 10:45 AM** **Coffee Break and Sponsor Expo**

SESSION 2 **10:45 AM – NOON** **Membrane Protein Structures: Illuminating Cellular Physiology**

Chair: Andrew Gustafson, OHSU

1. **Aritra Bej, UC Davis** Structural Mechanism of Ca²⁺-dependent Inactivation of the NMDA Receptor by Calmodulin.
2. **Amber Vogel, U of Utah** CryoEM studies of the insulin receptor bound to S961 and Ins-AC-S2 reveal critical features required for full antagonism.
3. **Maria Ayala, UC Davis** Mitochondrial respiratory complex III₂ acts as a platform for complex I assembly.

Lunch **12:00 – 1:15 PM** **Crocker Dining Hall**

WORKSHOP **1:30 – 3:30 PM** **PHENIX Software Workshop**
Presented by Dorothee Leibschner, Billy Poon, and Oleg Sobolev in Chapel Hall (Bring a Laptop)

FLASH TALKS **3:30 – 4:00 PM** **2-minute Talks by Poster Presenters**
Chair: Sandra Mous, SLAC

POSTER SESSION 1 **4:00 – 6:00 PM** **Seascape Room**
(Light Snacks)

Dinner **6:00 – 7:00 PM** **Crocker Dining Hall**

SESSION 3 **7:15 – 8:55 PM** **Structural Biology Informing Drug Discovery**
Chair: Alexander Deary, UC Merced

1. **Lieza Chan, UCSF** Giving Sotorasib a second chance: Repurposing the KRAS inhibitor into an antibody-based therapy.
2. **Kaylen Meeks, U of Missouri** Novel Active-Site Directed and Allosteric Inhibitors of PYCR1 from Docking-Guided X-Ray Crystallography.
3. **David Buckley, U of Missouri** Structural basis for recognition of the anti-atherogenic autoantibody A12 to aldehyde dehydrogenase 4A1.
4. **Nazar Gora, LBNL** Structural Insights into Alphavirus Macrodomain 1: Ligand-Induced Dimerization and AI-Guided Small Molecule Discovery.

Break **8:55 – 9:20 PM** **Late Night Snacks in Chapel Hall.**

SESSION 4 **9:20 – 10:35 PM** **Facilities and Instruments for the Next Generation of X-ray Experiments**
Chair: Moritz Kretzschmar, LBNL

1. **Matthew McLeod, Cornell U** Instrumentation and methods for efficient time-resolved X-ray crystallography of biomolecular systems with sub-10 ms time resolution.
 2. **Joshua Del Mundo, LBNL** The SIBYLS beamline at the Advanced Light Source: high-throughput and size exclusion chromatography small-angle X-ray scattering.
 3. **Adil Ansari, ASU** Microfluidics for Structural Biology at the ASU Compact XFEL facilities.
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TUESDAY

Breakfast **7:30 – 8:45 AM** **Crocker Dining Hall**

SESSION 5 **9:00 – 10:15 AM** **Molecular Interactions Regulating Gene Expression**

Chair: Luisa Garcia Michel, UC Merced

1. **Xinyi Chen, UC Riverside** Structural basis for the H2AK119ub1-specific DNMT3A-nucleosome interaction.
2. **Zengyu Shao, UC Riverside** Multi-layered heterochromatin interaction as a switch for DIM2-mediated DNA methylation.
3. **Luca Gebert, Scripps** Structural basis for gene silencing by siRNAs in humans.

Break **10:15 – 10:45 AM** **Coffee Break and Sponsor Expo**

SESSION 6 **10:45 AM – NOON** **Dynamic Proteins: Molecular Shapeshifters**

Chair: Shivani Sharma, CUNY

1. **Rebecca Warmack, CalTech** Structural evolution of nitrogenase states under alkaline turnover.
2. **Eduardo Flores, UC Merced** Correlating CRX Activation Domain Ensembles with Gene Expression Levels.
3. **Markus Tecson, SFSU** Oligomeric state-dependent activity changes in Human Glutamine Synthetase.

Lunch **12:00 – 1:15 PM** **Crocker Dining Hall**

PANEL DISCUSSION **1:30 – 2:30 PM** **Industry Career Panel, with Q & A**

with Keelan Guiley (Rezo Therapeutics), Tony Giannetti (Carterra Bio), João Rodrigues (Schrödinger), Renjing Wang (Merck)

SESSION 7 **2:45 – 4:00 PM** **Method Developments: Spectroscopy, Machine Learning, and Chemistry**

Chair: Canyon Reynolds, UC Davis

1. **Erzsi Szilagyi, LBNL** X-ray Absorption Spectroscopy of Dilute Metalloenzymes at X-ray Free Electron Lasers in a Shot-by-Shot Mode.
2. **Jeffrey Swan, U of Utah** Mechanistic classification of the AAA+ superfamily of ATPases using protein language models.
3. **Bjorn-Erik Wulff, Stanford U** Novel protein crosslinkers that reveal direct in-vivo residue-residue contacts through mass spec readout.

POSTER SESSION 2 **4:00 – 6:00 PM** **Seascape Room**
(Light Snacks)

Dinner **6:00 – 7:00 PM** **Crocker Dining Hall**

KEYNOTE **7:15 – 8:30 PM** **KEYNOTE presentation by Prof. Bil Clemons**
"A winding path to understanding phage-derived peptide antibiotics."

Reception **8:30 – 10:30 PM** **Drinks and Snacks – Seascape Room**

WEDNESDAY

Breakfast **7:30 – 8:45 AM** **Crocker Dining Hall**

SESSION 8 **9:00 – 10:15 AM** **Structure and Function of (Metallo)Enzymes I**
Chair: Emilio Mejia, SFSU

1. **Jessica Gable, UC Irvine** The Proximal Push in Cytochromes P450.
2. **Niko Vlahakis, UCLA** Combining MicroED and native mass spectrometry for structural discovery of enzyme-biosynthetic inhibitor complexes.
3. **Behnoush Seifinoferest, UC Merced** Understanding the structural and dynamic changes that underlie the emergence of new enzyme functions during evolution.

Break **10:15 – 10:45 AM** **Coffee Break and Sponsor Expo**

SESSION 9 **10:45 AM – NOON** **Structure and Function of (Metallo)Enzymes II**
Chair: Kylie Uyeda, UC Irvine

1. **Ana Kutchuashvili, SDSU** Structural and Mechanistic Investigations of t6A Biosynthesis in Bacteria.
2. **David Obe, U of Nebraska** Structural Insights into the Engineered O₂-Tolerant Thi4 Metallozymes for Enhanced Efficiency Under Sulfur-Limiting Conditions.
3. **Aliyah Pilién, U of the Pacific** Novel Structural Insights Expose Catalytic Mechanism of D-Dopachrome Tautomerase.

SPECIAL TALK **12:00 – 12:30 PM** **Untangle Challenge**
by James Holton

Conclusion **12:30 – 1:00 PM** **Presentation Awards and Closing Remarks**

Lunch **1:00 PM** **Boxed Lunch Pickup and Departure**
