Sunday, April 23

3:00 pm Check-in

6:00 pm Reception *(Lobby)*

7:00 pm Dinner

8:00 pm **Welcome and Opening Remarks (Organizers)**

8:05 pm **Keynote Lecture: Kevan M. Shokat**, University of California, San Francisco
Lessons from drugging traditional targets in non-traditional ways

9:05 pm Refreshments available at Bob's Pub

NOTE:
Meals are in the **Dining Room**
Talks are in the **Seminar Room**
Posters are in the **Lobby**

Monday, April 24

7:30 am Breakfast *(service ends at 8:45am)*

9:00 am **Session 1: Intracellular Labeling I**
Chair: Zev Gartner

9:00 am **Matthew B. Francis**, University of California, Berkeley
New chemical tools for site-specific protein labeling

9:25 am **Jennifer Prescher**, University of California, Irvine
Spying on cellular communication

9:50 am **Alice Ting**, Stanford University
Directed evolution of molecular probes for cell biology and neuroscience

10:15 am Break

10:45 am **Session 2: Intracellular Labeling II**
Chair: Pamela England

10:45 am **Kai Johnsson**, École Polytechnique Fédérale de Lausanne
Expanding protein function through synthetic chemistry

11:10 am **Carsten Schultz**, European Molecular Biology Laboratory
Chemical tools for studying signaling networks

11:35 am **Luke D. Lavis**, Janelia Research Campus/HHMI
Designing brighter dyes for advanced microscopy in cells and beyond

12:00 pm **Jordan Meier**, National Cancer Institute
Metabolic signal transduction via writers and reactivity

12:15 pm Lunch *(service ends at 1pm)*

2:00 pm **Session 3: Intracellular Labeling III**
Chair: Evan Miller

2:00 pm **Matthew Bogyo**, Stanford University
Chemical probes of protease activity: Applications for imaging and studies of enzyme function

2:25 pm **Xiaokun Shu**, University of California, San Francisco
Visualize spatiotemporal dynamics of cell signaling in vivo with rationally designed fluorogenic reporters

2:50 pm **Martin Schnermann**, National Cancer Institute, NIH
Cyanine-based near-IR uncaging chemistry: Discovery and applications

3:05 pm Break

3:30 pm **Session 4: Intracellular Labeling IV**
Chair: Dirk Trauner

3:30 pm **Ronald Raines**, University of Wisconsin-Madison
Diazo compounds: Versatile tools for chemical biology

3:55 pm **Michael Cohen**, Oregon Health & Science University
Decoding protein ADP-ribosylation networks in cells using chemical genetic approaches

4:20 pm **Pamela MM England**, University of California, San Francisco
Development of chemical probes for nuclear receptors

4:45 pm Short Break

5:00 pm **Poster Blitz!** *(3 mins / 3 slides each)*

Parker Deal, University of California, Berkeley
Ariel Furst, University of California, Berkeley
Fadi Jradi, Janelia Research Campus/HHMI
Jorge Marchand Benmaman, University of California, Berkeley
Colin O'Banion, UNC Chapel Hill
Saba Parvez, Cornell University
Jinyoung Seo, Seoul National University
Zhenhua Shen, Louisiana State University
Angela Steinauer, Yale University
Qiuliyang Yu, École Polytechnique Fédérale de Lausanne
Qinsi Zheng, Janelia Research Campus/HHMI
Xinqi Zhou, University of Nebraska - Lincoln

5:45 pm Poster Reception

7:15 pm Dinner

8:15 pm **Session 5: Molecular Modulation I**
Chair: Carsten Schultz

8:15 pm **Tarun Kapoor**, The Rockefeller University
Chemical genetics leads to new probes for eukaryotic ribosome biogenesis

8:40 pm **Zev Gartner**, University of California, San Francisco
Spatial rearrangement of activated EGFR is necessary for efficient activation of Ras

9:05 pm Refreshments available at Bob's Pub

Tuesday, April 25

7:30 am Breakfast *(service ends at 8:45am)*

9:00 am **Session 6: Molecular modulation II**
Chair: Luke Lavis

9:00 am **David S. Lawrence**, University of North Caroline, Chapel Hill
A tunable, light-responsive, platform for launching bioactive agents

9:25 am **Danica Fujimori**, University of California, San Francisco
Targeting chromatin methylation erasers using small molecules

9:50 am **Jack Taunton**, University of California, San Francisco
Broad-spectrum kinase profiling in live cells with lysine-targeted sulfonyl fluoride probes

10:15 am **Xin Zhou**, Stanford University
Optical control of cell signaling by single-chain photoswitchable kinases

10:30 am Break

11:00 am **Session 7: Chemical neuroscience in vertebrates I**
Chair: Alice Ting

11:00 am **Linda Hsieh-Wilson**, California Institute of Technology
Harnessing chemistry to discover new carbohydrate-mediated signaling pathways in the brain

11:25 am **Chris Chang**, University of California, Berkeley
Transition metal signaling in the brain and beyond

11:50 am **Dirk Trauner**, New York University
Controlling biological pathways with synthetic switches

12:15 pm Lunch *(service ends at 1pm)*

1:00 pm Tour *(optional – meet at reception)*

2:15 pm **Session 8: Chemical neuroscience in vertebrates II**
Chair: Matthew Bogyo

2:15 pm **Evan W. Miller**, University of California, Berkeley
Electrophysiology, unplugged: Fluorerscent indicators to probe membrane potential

2:40 pm **Scott M. Sternson**, Janelia Research Campus/HHMI
Engineering ultra-potent ion channel-ligand interactions

3:05 pm **Timothy E. Holy**, Washington University in St. Louis
Exploiting natural chemical diversity as a tool for neural circuit elucidation

3:30 pm Break

4:00 pm **Session 9: Chemical neuroscience in vertebrates III**
Chair: Helen Blackwell

4:00 pm **Stephen Miller**, University of Massachusetts Medical School
Bioluminescence: from molecular-level detail to glowing mouse brains

4:25 pm **James K. Chen**, Stanford University
Illuminating developmental biology through chemistry

4:50 pm **Group Discussion: Future of Chemical Biology**

5:45 pm Poster Reception

7:15 pm Dinner

8:30 pm Refreshments available at Bob's Pub

Wednesday, April 26

7:30 am Breakfast *(service ends at 8:45am)*

9:00 am **Session 10: Invertebrate chemistry**
Chair: Jennifer Prescher

9:00 am **Blake Peterson**, University of Kansas
Discovery of new therapeutic strategies using fluorescent molecular probes

9:25 am **Frank Schroeder**, Cornell University
Metabolomics for C. elegans: Uncovering the "dark matter" of the chemistry of life

9:50 am Break

10:15 am **Session 11: Chemistry of bacterial systems**
Chair: David S. Lawrence

10:15 am **Howard Hang**, The Rockefeller University
Chemical tools for exploring metabolite-protein modifications in biology

10:40 am **Helen E. Blackwell**, University of Wisconsin-Madison
Synthetic ligands for the interception of bacterial communication: New languages, new outcomes

11:05 am **Ming C. Hammond**, University of California, Berkeley
Riboswitching on the light: RNA-based biosensors to illuminate bacterial signaling

11:30 pm **Closing Discussion and Final Remarks**

12:00 pm Lunch and/or Departure

12:30 pm First shuttle to Dulles
1:30 pm Second shuttle to Dulles
2:30 pm Last shuttle to Dulles