International Chemical Biology Society

ICBS regional symposium
Cambridge, Mass
Novartis, Sept. 13th 2019

Agenda

8:45am-9:30am **Christina Woo (Harvard)** ***Binding site hotspot mapping by photo-affinity labeling***

9:30-10:15 am – **Jonathan Grob (Novartis)** ***Development of MicroCycle 1.0: A New Tool for Drug Discovery***

10:15-11:00 am - **David Israel (HitGen)** ***Discovery of Biological Probes from DNA Encoded Chemical Libraries***

11:00am-11:45 am – **Jason Gestwick (USCF)** ***Targeting Protein Stability in Misfolding Diseases***

11:45am to 1pm Lunch (on your own)

1:00-1:30 –**Tina Yuan (Novartis)** ***Floupack: Visualizing metabolite dynamics under MAPK inhibition in KRAS mutant cell lines***

1:30-2pm – **Matt Robers (Promega)** ***Energy transfer as a general approach to assess target occupancy and residence time for chemical probes in living cells***

2:00-2:30pm – **Sara Burhlage, (DFCI**) ***Target class approach to deubiquitinase inhibitors.***

2:30 – 2:45pm break

2:45- 3:15pm – **Tim Foley (Pfizer)** ***Lessons learned from a gene family-wide selectivity platform for metabolic Serine Hydrolases***

3:15 – 3:45pm – **Zaneta Nikolovska-Coleska (Univ Michigan)** ***Disruption of MLL oncofusion protein complexes as targeted therapy for acute myeloid leukemia***

3:45-4:15pm – **Katelyn B Cassidy (AstraZeneca)** ***LC-MS/MS approaches identify potential substrates and regulators of the E3-Ubiquitin Ligase HUWE1***

4:15 -4:30 pm – (break/poster set up)

4:30 pm to 6:30 pm – **Poster session and reception**

Call for poster abstracts

Speaker biographies:

Dr. Christina M. Woo, PhD

Department of Chemistry and Chemical Biology

Harvard University

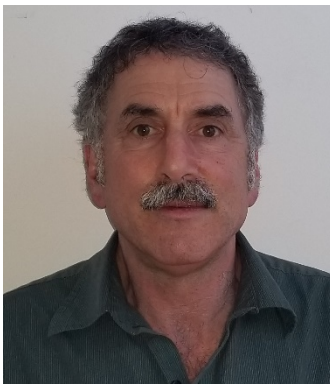
The final layer of biological regulation is through a complex network of molecular signals relayed by chemical modifications on proteins, which influence how proteins interact with each other and function. Understanding the code relayed by these chemical modifications requires new innovations to systematically discover and measure their regulatory outcomes, and will lead to new approaches to control living systems and strategies for the design of biomarkers, targeted therapeutics, and mitigation of off-target toxicities in drug discovery.

Biosketch: Christina M. Woo is an Assistant Professor in the Department of Chemistry and Chemical Biology at Harvard University, and an affiliate member of the Broad Institute. She obtained a BA in Chemistry from Wellesley College (2008), and conducted undergraduate research in the laboratory of Professor Dora Carrico-Moniz. She obtained her PhD in 2013 from Yale University under the guidance of Professor Seth B. Herzon as an NSF predoctoral fellow in the synthetic and chemical biology studies of diazofluorene antitumor antibiotics. In 2013, Christina joined the laboratory of Professor Carolyn R. Bertozzi at the University of California Berkeley as a Jane Coffins Child postdoctoral fellow, and continued at Stanford University (2015) as a Burroughs Wellcome Fund postdoctoral fellow, where she developed a mass-independent chemical glycoproteomics platform for the identification of non-templated post-translational modifications. Christina joined the faculty at Harvard University in 2016. Christina's independent research focuses on how small molecules influence protein function and biological signaling using large-scale chemical biology approaches. Her research has been recognized by the Sloan Research Foundation, International Chemical Biology Society Young Chemical Biologist Award, Bayer Early Excellence in Science Award, the NIH DP1 Avenir Award, and the Ono Pharma Foundation Breakthrough Science Award.

Jonathan Grob

Investigator, Novartis Institutes of Biomedical Research

Biosketch: I am a chemist who is passionate about leveraging my experience in Medicinal Chemistry & technology development to instigate a transformation toward automation & digital enabled drug hunting. 18 years at Novartis. Worked at 3 sites in my first 4 years. Currently working with a global group of entrepreneurial, automation loving, data science enabled team members to deliver MicroCycle 1.0 a new integrated drug discovery platform for NIBR.



Dr. David Israel, PhD

Vice President of Lead Discovery Sciences,

HitGen LTD, Chengdu China

David has spent his career working on the discovery and development of small molecule, peptide and protein drugs, and supporting drug discovery technologies. David is currently Vice President of Lead Discovery Sciences at HitGen LTD (Chengdu, China) where he oversees use and advancement of HitGen's DNA encoded library (DEL) platform. Prior to joining HitGen, David was Scientific Director at GSK, where he helped embed DEL technology into their drug discovery process, and expand application of the technology to cell membrane targets. He was scientific leader of the first DEL project to yield a molecule that progressed into clinical trials, an inhibitor of the enzyme soluble epoxide hydrolase. David was Vice President of Cell and Molecular Technologies at PRAECIS Pharmaceuticals (acquired by GSK), where he was instrumental in the discovery and early clinical development of the peptide-based drug abarelix, and in the design, development, validation and industrialization of the DEL platform. David started his industrial career at Genetics Institute (now Pfizer), where he worked on the engineering of mammalian cell expression vectors and development of cell lines and production processes for recombinant proteins, several of which are successful commercial products (recombinant Factor VIII and bone morphogenetic protein-2). He has published widely in these fields, and is an inventor on numerous patents related to drug discovery and development.

David received his BA degree in Biology from the State University of New York at Binghamton, and his PhD in Pharmacology from Stanford University. He lives in Concord, Massachusetts.

Dr. Jason E. Gestwicki, PhD

University of California, San Francisco

Biosketch: Jason E. Gestwicki is a Professor in the Department of Pharmaceutical Chemistry and the Institute for Neurodegenerative Disease (IND) at the University of California, San Francisco (UCSF). He earned a Ph.D. from University of Wisconsin-Madison and performed a Helen Hay Whitney postdoctoral fellowship at Stanford University. His laboratory uses high throughput screening and drug-like, small molecules to study the roles of molecular chaperones in protein misfolding diseases, such as neurodegeneration. Dr. Gestwicki is an Associate Editor at ACS Chemical Biology and the Director of the UCSF Graduate Program in Chemistry and Chemical Biology (CCB). He has published 160+ manuscripts.

Dr. Tina L Yuan, PhD

Investigator

Novartis Institutes for Biomedical Reasearch

Biosketch: Tina Yuan is an investigator at NIBR, whose focus is on the RAS/MAPK pathway. Her work centers on identifying combination treatments and novel drug discovery for KRAS and NRAS mutant cancers. Prior to joining NIBR, Dr. Yuan did a postdoctoral fellowship in the laboratory of Dr. Frank McCormick at UCSF and received her PhD from Harvard University, working in the lab of Dr. Lewis Cantley.

Dr. Matthew Robers, PhD

Senior Research Scientist & Group Leader

Promega Corporation

Biosketch: Following his post-graduate training at University of Wisconsin-Madison, Matthew has authored nearly 40 peer-reviewed publications and published patents on the application of novel assay chemistries to measure intracellular protein dynamics. Matthew's team currently focuses on the development of new technologies to assess target engagement, and has developed a biophysical techniques for quantifying compound affinity and engagement kinetics at selected targets within intact cells.

Dr. Sara Buhrlage, PhD

Dana-Farber's Cancer Biology Department

Harvard Medical School's Biological Chemistry and Molecular Pharmacology Department

Biosketch: Sara Buhrlage, PhD, is an Assistant Professor in Dana-Farber's Cancer Biology Department and Harvard Medical School's Biological Chemistry and Molecular Pharmacology Department. Her research group focuses on the development of first-in-class inhibitors and prototype drugs for deubiquitylating enzymes (DUBs) that can be utilized to pharmacologically validate members of the gene family as new targets for cancer treatment and other diseases. DUBs have garnered significant attention recently as potential therapeutic targets in the field of oncology due to their removal of degradative ubiquitin marks from cancer causing proteins.

Prior to joining as a faculty member in July 2015, Dr. Buhrlage was a professional track scientist at Dana-Farber in the medicinal chemistry core laboratory. In this role she collaborated with Institute researchers to pharmacologically validate novel targets of disease and study mechanisms of oncogenesis and drug resistance.

Dr. Buhrlage completed a Doctor of Philosophy in organic chemistry in 2008, under the direction of Professor Anna Mapp, PhD, from the University of Michigan, where she successfully designed, synthesized and characterized small molecules that bind the transcriptional co-activator CBP and upregulate transcription when tethered to DNA. Following completion of her Doctor of Philosophy, Dr. Buhrlage trained for two years in medicinal chemistry at the Broad Institute. There, she led a team of six chemists performing lead optimization on a macrocycle inhibitor of the hedgehog protein, which resulted in analogs with superior potency, improved metabolic stability, excellent in vivo pharmacokinetics, and no in vitro safety liabilities.

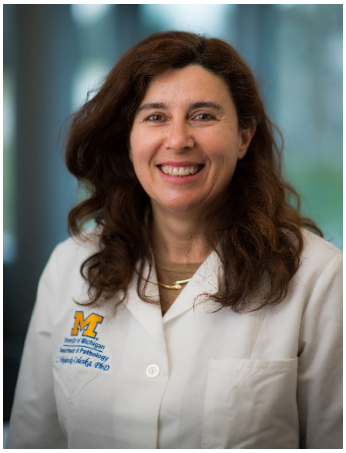
Dr. Timothy L. Foley, PhD

Lab head, Pharmacology & DNA-Encoded Libraries

Pfizer

Biosketch: Tim first obtained his BSc in cell biology and biochemistry and then a MSc in organic chemistry at the University of California - San Diego (UCSD). Still at UCSD, he pursued inhibitors of bacterial natural product biosynthesis and received his Ph.D. in chemistry in 2010. He conducted his post-doctoral studies at the National Center for Advancing Translational Sciences (NCATS) at the NIH from 2010 to 2014. In this position, he further developed his knowledge of enzymology and molecular pharmacology in the context of high throughput screening.

Tim joined Pfizer in February 2014 to support the Pfizer Centers for Therapeutic Innovation portfolio and the Serine Hydrolase Gene Family platform. Tim's lab guides pharmacology assay design and execution for projects to support hit discovery and compound optimization into clinical candidates. Over the past two years, has been leading the organizational effort to develop hit identification capabilities with DNA-encoded library technologies.



Dr. Zaneta Nikolovska-Coleska, PhD

University of Michigan

Biosketch: Dr. Zaneta Nikolovska-Coleska is an Associate Professor of Pathology, Director of Molecular & Cellular Pathology Graduate Program, and Associate Director of Program in Biomedical Sciences at University of Michigan. She also serves as a co-Director of T32 NIGMS training program in translational research, at Department of Pathology, Medical School, University of Michigan. Dr. Nikolovska-Coleska received her B.S. in Pharmacy, M.S. and Ph.D in Pharmaceutical Chemistry from University Ss. Cyril and Methodius, Skopje, Republic of Macedonia. She completed post-doctoral training in drug discovery with Professor Shaomeng Wang. In 2008 Dr. Nikolovska-Coleska joined the faculty of the Department of Pathology at the University of Michigan as Assistant Professor and was promoted to Associate Professor (with tenure) in 2015. Dr. Nikolovska-Coleska's lab focuses on chemical genomics, discovery and application of active chemical compounds for the interrogation of biological systems and improvement of human health. Her research aims on discovery, design, characterization and development of small-molecules as new molecularly targeted therapies for cancer by using interdisciplinary approach combining biophysical and biochemical methods, structural biology, medicinal chemistry and functional biology. In particular her research is focused on targeting protein-protein interactions involved in controlling the programmed cell death and epigenetics. Her research program is well-funded by multiple grants from federal agencies, NIH and DoD, foundations, and professional associations. Dr. Nikolovska-Coleska was the recipient of several awards including New Investigator Award from Leukemia Research Foundation, Innovator Award from Harrington Discovery Institute and most recently AACR-Bayer

Innovation and Discovery Award. Dr. Nikolovska-Coleska has published more than 67 papers in peer-reviewed scientific journals, presented on number of national and international meetings, and is an inventor on more than 15 international and US patents and patent applications. She contributed to the discovery and development of clinical candidate AT-406, an XIAP inhibitor, which is currently in Phase I clinical trials for the treatment of human cancer. In addition to her academic role, Dr. Nikolovska-Coleska is a member of the Board of Directors of the International Chemical Biology Society.

Dr. Katelyn B Cassidy, PhD

Senior Scientist

AstraZeneca

Biosketch: Katelyn is a recent graduate of the Molecular and Cellular Biology program at Dartmouth College. Her thesis work primarily focused on coupling genetic engineering and molecular biology tools with mass spectrometry applications to investigate biological questions. In her graduate tenure she served as a proteomics resource to the Dartmouth community and as a student representative to the program committee. Prior to graduate school, Katelyn worked for Pfizer and Cubist Pharmaceuticals (a now wholly owned subsidiary of Merck). In April 2019, she joined the Chemical Biology and Proteomics group at AstraZeneca where she utilizes proteomics methods to characterize the selectivity and mechanism of small molecule protein degraders.