

# **Chemical Biology in THE HUB Symposium**

**October 22<sup>nd</sup>, 2018**



**Novartis Institute for BioMedical Research**  
181 Massachusetts Ave, Cambridge MA

## Symposium Agenda

Time	Presentation	Speaker	Location
8:30-9:00	<b>Check-in</b>		Novartis Atrium
9:00-9:20	Welcome - Introductory remarks	<b>Bassam Shakhshiri (U Wisconsin/ACS)</b> Introduction by: Lee Johnson	Auditorium
9:20-10:00	Searching chemical space for microRNA-selective inhibitors	<b>Amanda Garner (University of Michigan)</b> Introduction by: Paola Castaldi	Auditorium
10:00-10:40	Small Molecule targeting of RNA	<b>Jennifer Petter (Arrakis Therapeutics)</b> Introduction by: Donovan Chin	Auditorium
10:40-11:00	<b>Coffee Break</b>		Novartis Atrium
11:00-11:40	Phenotypic Drug Discovery in Model Organisms	<b>Ethan Perlstein (Perlara)</b> Introduction by: Steve Canham	Auditorium
11:40-12:20	Cellular Chemical Proteomics	<b>Ben Cravatt (Scripps Research Institute)</b> Introduction by: Erik Hett	Auditorium
12:20-1:30	<b>Lunch</b>		Novartis Atrium
1:30-2:10	Accelerating drug discovery through the power of microscopic images	<b>Anne Carpenter (Broad Institute)</b> Introduction by: Sue Swalley	Auditorium
2:10-2:50	Conquering Disease with Targeted Protein Degradation	<b>Andy Phillips (C4 Therapeutics)</b> Introduction by: Rhamy Zaid	Auditorium
2:50-3:10	<b>Coffee Break</b>		Novartis Atrium
3:10-3:50	Chemical Targeting of the Ubiquitin System	<b>Sara Buhrlage (Dana-Faber)</b> Introduction by: Jeremy Baryza	Auditorium
3:50-4:30	Targeted Protein Degradation	<b>Jay Bradner (Novartis)</b> Introduction by: John Tallarico	Auditorium
4:30-4:40	Concluding remarks and looking to 2019	<b>John Tallarico / Erik Hett</b>	Auditorium
4:40-6:30	<b>Reception &amp; Posters</b>		181 Café

## Speaker Presentation Title and Biography

### Professor Bassam Shakhashiri

Professor Bassam Shakhashiri  
William T. Evjue Distinguished Chair  
Wisconsin Idea at University of Wisconsin, Madison  
Madison, WI USA



Bassam Z. Shakhashiri is the first holder of the William T. Evjue Distinguished Chair for the Wisconsin Idea at UW-Madison. He is well known internationally for his effective leadership in promoting excellence in science education at all levels, and for his development and use of demonstrations in the teaching of chemistry in classrooms as well as in less formal settings, such as museums, convention centers, shopping malls and retirement homes. He is an advocate for policies to advance knowledge and to use science and technology to serve society. He promotes the exploration and establishment of links between science, the arts and the humanities, and the elevation of discourse on significant societal issues related to science, religion, politics, the economy, and ethics. Professor Shakhashiri was the 2012 president of the American Chemical Society.

### Professor Amanda Garner

Searching chemical space for microRNA-selective inhibitors

Professor Amanda Garner  
Associate Professor of Medicinal Chemistry  
University of Michigan  
Ann Arbor, MI USA



Amanda Garner received her Ph.D. in Chemistry from the University of Pittsburgh working under the supervision of Prof. Kazunori Koide and completed NIH-funded postdoctoral studies in the laboratory of Prof. Kim Janda at The Scripps Research Institute. She began her independent career in 2013 in the Department of Medicinal Chemistry at the University of Michigan. Her laboratory uses chemical biology, medicinal chemistry and molecular and cellular biology approaches to investigate the high-risk/high-reward areas of targeting microRNAs, RNA-protein and protein-protein interactions for probe and drug discovery.

## Jennifer Petter

### Small Molecule Targeting of RNA

Jennifer Petter, Ph.D.  
Chief Scientific Officer  
Arrakis Therapeutics



Dr. Petter is Founder and CSO of Arrakis Therapeutics. Previously she was Vice President of Chemistry at Celgene, Vice President of Drug Discovery at Avila Therapeutics, Vice President of Research at Mersana Therapeutics, Director of Small Molecule Drug Discovery at Biogen, Section Head in Oncology Chemistry at Sandoz/Novartis, and Assistant Professor of Chemistry at the University of Pittsburgh. Dr. Petter graduated from Dartmouth College, earned her PhD in organic chemistry at Duke University with Ned Porter and was a post-doctoral fellow in Ron Breslow's group at Columbia University.

## Ethan Perlstein

### Phenotypic Drug Discovery in Model Organisms

Ethan Perlstein, Ph.D.  
Chief Executive Officer and Founder  
Perlara, PBC



Dr Ethan Perlstein received a PhD in 2006 from Harvard University (Department of Molecular and Cell Biology) while working in the laboratory of Professor Stuart Schreiber. He then completed an independent postdoctoral fellowship at the Lewis-Sigler Institute at Princeton University from 2007 to 2012. In 2014, he founded Perlara PBC, the first biotech public benefit corporation partnering with families, organizations and researchers to cure diseases previously thought too rare to matter.



## Professor Ben Cravatt

### Cellular Chemical Proteomics

Professor Benjamin Cravatt  
Professor and Chair, Department of Chemistry  
The Scripps Research Institute  
La Jolla, CA USA



Dr. Cravatt is Professor and Norton B. Gilula Chair of Chemical Biology in the Department of Chemistry at The Scripps Research Institute. His research group is interested in developing chemical proteomic technologies that enable protein and drug discovery on a global scale and applying these methods to characterize proteins that play important roles in human physiology and disease, especially as pertains to the nervous system and cancer. Dr. Cravatt obtained his undergraduate education at Stanford University, receiving a B.S. in the Biological Sciences and a B.A. in History. He then received a Ph.D. from The Scripps Research Institute (TSRI) in 1996. Professor Cravatt joined the faculty at TSRI in 1997. Dr. Cravatt is an Associate Editor for *JACS* and is a co-founder and scientific advisor of Activx Biosciences, Abide Therapeutics, and Vividion Therapeutics. His honors include a Searle Scholar Award, the Eli Lilly Award in Biological Chemistry, a Cope Scholar Award, the Protein Society Irving Sigal Young Investigator Award, the Tetrahedron Young Investigator Award in Bioorganic and Medicinal Chemistry, the ASBMB Merck Award, and memberships in the American Academy of Arts and Sciences, National Academy of Medicine, and National Academy of Sciences.

## Anne Carpenter

Accelerating drug discovery through the power of microscopic images

Anne Carpenter, PhD  
Senior Director, Imaging Platform  
Broad Institute  
Cambridge, MA USA



Dr. Carpenter is an Institute Scientist at the Broad Institute of Harvard and MIT. Her research group develops algorithms and strategies for large-scale experiments involving images. The team's open-source CellProfiler software is used by thousands of biologists worldwide ([www.cellprofiler.org](http://www.cellprofiler.org)). Carpenter is a pioneer in image-based profiling, the extraction of rich, unbiased information from images for a number of important applications in drug discovery and functional genomics.

Carpenter focused on high-throughput image analysis during her postdoctoral fellowship at the Whitehead Institute for Biomedical Research and MIT's CSAIL (Computer Sciences/Artificial Intelligence Laboratory). Her PhD is in cell biology from the University of Illinois, Urbana-Champaign. Carpenter has been named an NSF CAREER awardee, an NIH MIRA awardee, a Massachusetts Academy of Sciences fellow (its youngest at the time), and a Genome Technology "Rising Young Investigator".

## Andy Phillips

### Conquering Disease with Targeted Protein Degradation

Andy Phillips, Ph.D.  
President and Chief Executive Officer  
C4 Therapeutics  
Cambridge, MA USA



Andy Phillips is President and Chief Executive Officer of C4 Therapeutics, a biotech company that is developing a new class of small molecules that direct the machinery of the ubiquitin-proteasome system to selectively degrade disease-relevant proteins for therapeutic benefit.

Before joining C4 Therapeutics, Andy was Senior Director, Center for Development of Therapeutics at the Broad Institute of MIT and Harvard, where he led overall therapeutic efforts and provided strategic leadership for a number of major partnerships. Previously, he was a Full Professor of Chemistry at Yale University, where he received the ACS Cope Scholar Award for his research accomplishments, which included the development of small molecules aimed at modulating 'undruggable' targets. Prior to this, he was a Full Professor of Chemistry and Biochemistry at the University of Colorado at Boulder, where his efforts in complex molecule synthesis and targeting protein-protein interactions garnered a number of awards, including an Alfred P. Sloan Research Fellowship, an Eli Lilly Grantee Award, and a National Science Foundation CAREER Award. Andy received a B.Sc. (Hons) in biochemistry and a Ph.D. in biochemistry and chemistry from the University of Canterbury in New Zealand and completed a postdoctoral fellowship in organic chemistry at the University of Pittsburgh.

## Sara Buhrlage

### Chemical Targeting of the Ubiquitin System

Professor Sara Buhrlage

Assistant Professor of Biological Chemistry and Molecular Pharmacology

Dana-Farber Cancer Institute

Boston, MA USA



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.



## Jay Bradner

### Targeted Protein Degradation

Jay Bradner  
President

Novartis Institute for BioMedical Research  
Cambridge, MA USA



James (Jay) Bradner, M.D., joined Novartis on January 1, 2016 and became President of the Novartis Institutes for BioMedical Research (NIBR) on March 1, 2016. He is a member of the Executive Committee of Novartis.

Prior to joining Novartis, Dr. Bradner was on the faculty of Harvard Medical School in the Department of Medical Oncology at the Dana-Farber Cancer Institute in the United States from mid-2005 through 2015. Dr. Bradner is a co-founder of five biotechnology companies and has co-authored more than 180 scientific publications and 30 US patent applications.

Dr. Bradner is a graduate of Harvard University and the University of Chicago Medical School in the US. He completed his residency in medicine at Brigham and Women's Hospital and his fellowship in medical oncology and hematology at the Dana-Farber Cancer Institute. He has been honored with many awards and was elected into the American Society for Clinical Investigation in 2011 and the Alpha Omega Alpha Honor Medical Society in 2013.