



2019

**The Tenth Annual
August M. Watanabe Symposium
in Chemical Biology**

Saturday, October 19, 2019
Harry G. Day Lecture Hall
Chemistry C122
Indiana University Bloomington

Hosted by





Dr. August M. Watanabe was a renowned physician, researcher, professor, entrepreneur and venture capitalist. He was the founding Chairman of BioCrossroads and developed the initial strategic plan that established the organization. Dr. Watanabe was Executive Vice President of Science and Technology and a member of the Board of Directors at Eli Lilly and Company from 1996 to 2003. He joined

Lilly in 1990 and became President of Lilly Research Laboratories in 1994. Under his leadership Lilly launched 11 important new pharmaceutical products.

Prior to joining Lilly, Dr. Watanabe was a full-time faculty member of the Department of Medicine at the Indiana University School of Medicine from 1971 to 1990. In 1978, he became the youngest Professor of Medicine at the university, and from 1983 to 1990, he was the Chairman of the Department of Medicine. Dr. Watanabe served as co-founder of Marcadia Biotech, partner in Twilight Venture Partners, and a director of Ambrx, Endocyte, QuatRx and Kalypsys. He was also a senior advisor to Frazier Healthcare Ventures.

Dr. Watanabe remained active in the community, serving as a director of the Indiana University Foundation, the Regenstrief Foundation, Christel House International and the Indianapolis Symphony Orchestra. During his academic and research career, Dr. Watanabe co-authored more than 100 scientific publications and book chapters. He served on the editorial boards of scholarly journals and as an officer in several national academic organizations, including the American College of Cardiology and the American Heart Association. Dr. Watanabe received his B.S. from Wheaton College and his M.D. from the Indiana University School of Medicine.

The Tenth Annual Watanabe Symposium in Chemical Biology

8:15 — 8:50 Coffee & Breakfast Refreshments

8:50 — 9:00 Welcome: David Giedroc

Introduction: David Clemmer

9:00 — 9:45 R. Graham Cooks, Ph.D., Purdue University

**Intraoperative Brain Cancer Diagnostics,
High Throughput Screening and Reaction
Acceleration in Ambient Ionization Mass
Spectrometry**

Introduction: Adam Zlotnick

9:45 — 10:30 Michael Sofia, Ph.D., Arbutus Biopharma, Inc

**From the Physical Chemistry of Capsid
Assembly to Assembly-directed Antivirals**

Introduction: Lane Baker

10:30 — 11:15 Jackie Papkoff, Ph.D., Assembly Biosciences

**The Human Microbiota in Health & Dis-
ease: Novel Therapeutic Strategies from
the Microbiome**

11:15 — 11:30 Break, Walk to the IMU Solarium

11:30 — 1:00 Poster Session in Solarium, IMU

1:00 — 1:45 Lunch in Solarium

1:45 — 2:00 Walk back to Chemistry Building C122

Introduction: Megan Thielges

2:00 — 2:45 Tom Muir, Ph.D., Princeton University
**Painting Chromatin with Synthetic
Protein Chemistry**

Introduction: Stephen Jacobson

2:45 — 3:30 David Clemmer, Ph.D., Indiana University
**Mass Spectrometry Based Methods for
Characterizing Native and Non-native
Protein from Solution**

3:30 — 4:00 Coffee Break, Chemistry Atrium

Introduction: Nicola Pohl

4:00 — 4:45 Jirong Lu, Ph.D., Eli Lilly & Company
**Ixekizumab Discovery Journey -Shared
Learning**

Introduction: David Giedroc

4:45 — 5:30 Richard DiMarchi, Ph.D., Indiana University
**Novel Drug Treatments for Metabolic
Diseases and Obesity, from Gut
Hormones to Targeted Multimode
Pharmacology**

Closing Remarks: Richard DiMarchi



R. Graham Cooks, Ph.D.

Distinguished Professor of
Chemistry
Purdue University

Graham Cooks was educated at the University of Natal and at Cambridge University and is the Henry Bohn Hass Distinguished Professor of Chemistry at Purdue University. His interests in mass spectrometry include ion soft landing at surfaces, the kinetic method of thermochemical measurement and high throughput and on-line reaction monitoring. Several new types of mass spectrometers have been constructed in his laboratory, including miniature and hybrid instruments. He contributed to the development of desorption ionization and tandem mass spectrometry, and to ambient mass spectrometry especially desorption electrospray ionization and its applications to medical diagnostics. Professor Cooks has authored over 1200 publications, served as PhD thesis advisor to 138 students, has an *h*-index of 104 [ISI Web of Science] and is a member of the National Academy of Science and the American Academy of Arts and Sciences.



Michael J. Sofia, Ph.D.

Chief Scientific Officer
Arbutus Biopharma, Inc.

Michael J. Sofia, Ph.D. is co-founder and Chief Scientific Officer of Arbutus Biopharma. He has also held research and research management positions at Gilead Sciences, Pharmasset, Bristol-Myers Squibb, Transcell Technologies and Eli Lilly & Co. Mike received his B.A. in chemistry from Cornell University, his Ph.D. from the University of Illinois and was an NIH postdoctoral fellow at Columbia University. Mike has introduced numerous drugs into clinical development and is the principal inventor of sofosbuvir currently marketed as the backbone of HCV curative therapies Sovaldi®, Harvoni®, Epclusa® and Vosevi®. Mike has received numerous awards for his work on hepatitis C including the 2015 Economist Innovation Award, the 2015 ACS Heroes of Chemistry Award, and the 2016 Lasker-DeBakey Award in Clinical Medical Research. In 2017 he was inducted into the ACS Medicinal Chemistry Hall of Fame.



Jackie Papkoff, Ph.D.

Chief Scientific Officer
Microbiome
Assembly Biosciences

Dr. Papkoff has worked in both pharma and biotech for over 25 years and has broad scientific strategy, executive leadership and business experience. She has deep expertise in cell biology and molecular mechanisms of disease that she has applied to therapeutic and biomarker preclinical discovery & development in oncology, inflammation and autoimmunity. Prior to joining Assembly Biosciences, Dr. Papkoff was Senior Vice President Research at Evelo Biosciences where she led the preclinical scientific team to discover, validate and nominate microbial therapeutics for clinical development in oncology indications. Prior to Evelo Dr. Papkoff was a founding member of the J&J California Innovation Center where she served as Vice President of Immunology Scientific Innovation for the Janssen Immunology Therapeutic Area focused on inflammatory and autoimmune diseases. Previously, she was CSO of CFD Therapeutics, a cancer-immunology focused antibody therapeutics company she co-founded, and held R&D leadership positions at diaDexus, Inc. and Aventis pharma. Dr. Papkoff has a B.A in Biology from University of California Santa Cruz, a Ph.D. in Biology from University of California San Diego & The Salk Institute and was a postdoctoral fellow at Stanford University and the University of California San Francisco.



Tom Muir, Ph.D.

Van Zandt Williams Jr. Class of
'65 Professor
Princeton University

Tom W. Muir received his B.Sc. and Ph.D. in chemistry from the University of Edinburgh in 1989 and 1993, respectively, under the direction of Professor Robert Ramage. After postdoctoral studies with Stephen B.H. Kent at The Scripps Research Institute, he joined the faculty of The Rockefeller University in 1996 as the Richard E. Salomon Family Professor and Director of the Pels Center of Chemistry, Biochemistry and Structural Biology. In 2011, he joined the faculty of Princeton University as the Van Zandt Williams Jr. Class of '65 Professor of Chemistry and currently serves as chair of the department. He has published over 200 scientific articles in the area of chemical biology and is best known for developing methods for the preparation of proteins containing unnatural amino acids, posttranslational modifications and spectroscopic probes. These approaches are now widely employed in academia and industry. His current interests lie in epigenetics, where he tries to illuminate how chemical changes to chromatin drive different cellular phenotypes.



David Clemmer, Ph.D.

Distinguished Professor
Robert and Marjorie Mann
Chair
Indiana University

David E. Clemmer joined the faculty of Indiana University in 1995 as an Assistant Professor in the analytical division. His research is focused on developing mass-spectrometry based technologies for characterizing complex mixtures. His group is especially interested in protein structure and stability and is often credited for pioneering nested ion mobility mass spectrometry techniques. David and his collaborators have published more than 250 papers. He is currently a Distinguished Professor and holds a Robert and Marjorie Mann Chair.



Jirong Lu, Ph.D.

Distinguished Research Fellow
Eli Lilly & Co.

Dr. Lu joined Lilly Research laboratories in 1997 after completing a Ph.D. at the University of Oregon in 1992, and a postdoctoral fellowship at Washington University in St. Louis in 1997. Dr. Lu is currently Distinguished Research Fellow and Group Leader in the Biotechnology Discovery Research group at Lilly. Over the past 22 years, Dr. Lu has been recognized for her leadership and technical contributions to a number of programs in the fields of autoimmune, cancer, and neurodegenerative diseases. She was named inventor and has contributed to the advancement of multiple molecules for clinical development including one recently launched product, Taltz™. Her technical insights and contributions were instrumental in developing and implementing several technology platforms critical for biotherapeutics, including development of multi-functional therapeutic platform and advancement of formulation and delivery research efforts at Lilly, including enhancing brain and oral delivery for biologics. She has contributed to the general scientific community through a number of publications and patents. Dr. Lu is passionate about the value of mentoring and has championed development of a number of scientists. She participates in a number of activities at Lilly and in the local community to help promote cultural diversity, and currently serves as Chair for the Chinese Culture Network.



Richard DiMarchi, Ph.D.

Distinguished Professor
Gill Chair in Biomolecular
Sciences
Indiana University

Prof. DiMarchi is a Distinguished Professor of Chemistry and Gill Chair in Biomolecular Sciences at Indiana University. He is also a Vice President at Novo Nordisk and former Group Vice President at Eli Lilly & Co. He is widely recognized for his discovery and development of rDNA-derived Humalog®, rGlucagon®, and Forteo®. His academic research has broadened our understanding of glucagon physiology while championing the discovery of single molecule mixed agonists for the treatment of diabetes and obesity. He was identified as a top-five translation researcher by *Nature Biotechnology* for the years 2014 and 2015. He is a co-founder of multiple biotechnology companies including Ambrx., Marcadia Biotech, Assembly Biosciences, MB2, Calibrium, and MBX. He is currently Chairman of the Peptide Therapeutics Foundation, a not-for-profit 501c(3) organization established in 2008 to promote research and development of peptide therapeutics. Prof. DiMarchi is a member of the National Academy of Medicine and the National Inventors Hall of Fame.

Ten Years of Watanabe

2018

Paul Ahlquist • Stephen Harrison • Tuli Mukhopadhyay •
Priscilla Yang • Z. Hong Zhou • Adam Zlotnick

2017

Stephen D. Bell • Anglea M. Gronenborn • Taekjip Ha •
Jody Puglisi • Robert T. Sauer • Michael VanNieuwenhze

2016

George Barany • M. Kevin Brown • Scott E. Denmark •
Margaret M. Faul • Steve Hitchcock • Tom Snaddon •
Paul A. Wender

2015

Marvin H. Caruthers • Trevor Douglas • Samuel H. Gell-
man • Chad M. Rienstra • Megan Thielges • James R.
Williamson • Zhong-Yin Zhang

2014

Catherine Drennan • Daniel Kearns • Philip Low •
Michael Weiss • Yan Yu • Xiaowei Zhuang

2013

Jane Aldrich • Lane Baker • William DeGrado •
David Giedroc • Thomas Meade • Shahriar Mobashery

2012

Kate Carroll • Stephen Jacobson • Tom Kodadek •
Scott McLuckey • Peter Schultz • JoAnne Stubbe

2011

Jon Clardy • Andrea Cochran • Nicola Pohl •
Douglas C. Rees

2010

Jeffery W. Kelly • Laura L. Kiessling •
Thomas V. O'Halloran • Ronald T. Raines

Today's lunch provided by:



Ray (Rui) Chen
VP of Sales and Technical support
Biosciences Group (North America)
GenScript USA

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Thank you for joining us
the Tenth Annual Watanabe Symposium.

We appreciate your participation in helping to
commemorate this special event.


