



2018

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

Saturday, October 20, 2018
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.

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8:15 — 8:50 Coffee & Breakfast Refreshments

8:50 — 9:00 Welcome: David Giedroc

Introduction: Yan Yu

9:00 — 9:45 Paul Ahlquist, Howard Hughes Medical
Institute, University of Wisconsin-Madison

**Membrane Remodeling, Protein
Multimerization and Redox Switching in
RNA Virus**

Introduction: Richard DiMarchi

9:50 — 10:35 Adam Zlotnick, Indiana University
**From the Physical Chemistry of Capsid
Assembly to Assembly-directed Antivirals**

10:40 — 11:00 Break, Walk to the IMU

11:00 — 12:00 Poster Session in Solarium, IMU

12:00 — 1:00 Lunch in Solarium

Introduction: Trevor Douglas

1:15 — 2:00 Priscilla Yang, Harvard University
**Small Molecule Inhibitors of Viral Entry
inspired by the Humoral Immune response
to Viral Infection**

Introduction: Sussane Ressler

2:05 — 2:50 Z. Hong Zhou, UCLA
**Imaging Viral Genomes and Genomic
Actions by CryoEM**

2:55 — 3:15 Coffee Break, Chemistry Atrium

Introduction: Bogdan Dragnea

3:15 — 3:45 Tuli Mukhopadhyay, Indiana University
**Our lab's journey to inhibit Alphavirus
Assembly**

Introduction: John Patton

3:50 — 4:35 Stephen Harrison, Howard Hughes
Medical Institute, Harvard Medical School
Structural Basis of Viral Entry

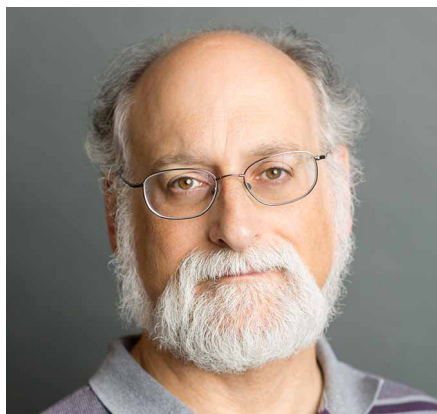
4:40 — 5:00 Closing Remarks: Richard DiMarchi



Paul Ahlquist

University of Wisconsin-Madison
Kaesberg Professor and
Steenbock Professor
Investigator, Howard Hughes
Medical Institute and Morgridge
Institute for Research
Associate Director for Basic
Sciences, UW Carbone Cancer
Center

Paul Ahlquist (BS, Physics; PhD, Biophysics) is the Kaesberg Professor of Molecular Virology, Oncology and Plant Pathology and the Steenbock Professor of Microbiology at the University of Wisconsin – Madison. He is also an Investigator of the Howard Hughes Medical Institute, the John and Jeanne Rowe Chair of Virology at the Morgridge Institute for Research, and Associate Director for Basic Sciences at the UW Carbone Cancer Center. Among other awards, Dr. Ahlquist is a member of the National Academy of Sciences, a Fellow of the American Association for the Advancement of Science, and recipient of an NIH MERIT Award, an NSF Presidential Young Investigator Award, and the van Arkel Honorary Chair in Biochemistry of Leiden University, The Netherlands. Dr. Ahlquist's research interests include the molecular mechanisms of virus replication, host interactions, pathogenesis, and control.



Adam Zlotnick

Indiana University
Professor
Department of Molecular and
Cellular Biochemistry

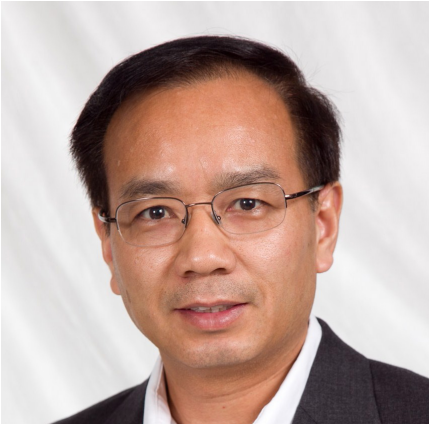
Adam Zlotnick studies the correlation between virus structure and assembly, including small molecules that target structural proteins. He earned his PhD at Purdue University with Jack Johnson and was a National Research Council post-doctoral fellow at NIH, working in the lab of Alasdair Steven. He has been a professor at Indiana University since 2008. In 2012, along with scientific and business partners, he co-founded Assembly Pharmaceuticals, now part of Assembly Biosciences, to develop antivirals directed against hepatitis B virus. Dr. Zlotnick is a Fellow of the American Academy of Microbiology and a Fellow of the AAAS.



Priscilla Yang

Harvard Medical School
Professor, Department of
Microbiology and
Immunobiology

Priscilla Yang earned her PhD in Bioorganic Chemistry at the University of California, Berkeley. Following postdoctoral training in viral immunology at Scripps Research, she started her independent career at Harvard Medical School, where her laboratory combines chemical and pharmacological approaches to address fundamental and translational problems in virology. Her research interests and goals are centered on discovery and validation of new antiviral targets, identifying alternatives to combination therapy for avoiding antiviral resistance, and investigating the function of lipid membranes in RNA virus replication. She is a strong advocate for diversity in science.



Z. Hong Zhou

UCLA
Professor
Department of Microbiology,
Immunology & Molecular
Genetics
Director, Electron Imaging
Center for Nanomachines

Z. Hong Zhou is a Professor of Microbiology, Immunology and Molecular Genetics and the Director of the Electron Imaging Center for Nanomachines at University of California, Los Angeles. He received his early education in physics at the University of Science and Technology of China and earned his PhD in biochemistry at the Baylor College of Medicine under the supervision of Wah Chiu.

Zhou has published ~200 research articles and chapters. His research addresses both practical and fundamental biological questions, such as how viruses assemble and spread and how proteins and nucleic acids interact to store and release energy, to transduce signals, and to perform tasks of chemistry or functions of life.

Zhou was a Pew Scholar in Biological Sciences and a Basil O'Connor Scholar of the March of Dimes Foundation. He is a recipient of a Burton Award and K. H. Kuo Distinguished Scientist Award.



Tuli Mukhopadhyay

Indiana University
Associate Professor
Department of Biology

Tuli Mukhopadhyay is an Associate Professor in the Department of Biology at Indiana University. She earned her PhD in Chemistry at the University of Illinois at Chicago where she studied protein-lipid interactions with Wonhwa Cho. Following graduate school, Tuli was a postdoctoral fellow at UTSW where she studied heterotrimeric G proteins with Elliott Ross, before moving to Purdue University where she studied enveloped viruses with Michael Rossmann and Richard Kuhn. Tuli started her independent career at IU in 2005. Her laboratory focuses on Alphavirus assembly and spread.



Stephen Harrison

Harvard Medical School
Giovanni Armenise-Harvard
Professor
Basic Biomedical Science;
Investigator, Howard Hughes
Medical Institute

Stephen C. Harrison is the Giovanni Armenise-Harvard Professor in Basic Biomedical Sciences at Harvard Medical School, and Investigator in the Howard Hughes Medical Institute. He obtained his B.A. from Harvard in 1963 and his Ph.D. (Biophysics) from Harvard in 1968. He has served on the Harvard faculty since 1971. Between 1972 and 1996, he was Chair of the Board of Tutors in Biochemical Sciences, Harvard's undergraduate program in biochemistry; he was Chair of the Department of Biochemistry and Molecular Biology (Faculty of Arts & Sciences) from 1988-1992. For many years, his research laboratory was linked closely with that of the late Don C. Wiley. Harrison has made important contributions to structural biology, most notably by determining and analyzing the structures of viruses and viral proteins, and also by crystallographic analysis of protein/DNA complexes, and by structural studies of protein-kinase switching mechanisms. The initiator of high-resolution virus crystallography, he has moved from his early work on tomato bushy stunt virus (1978) to the study of more complex human pathogens, including the capsid of human papillomavirus, the envelope of dengue virus, and several components of HIV.

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Thank you for joining us at
the Ninth Annual Watanabe Symposium.

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

