American Chemical Society's New York Section, Inc.
William H. Nichols Distinguished Symposium

Honoring Professor Benjamin F. Cravatt
"ADVANCING BIOLOGY THROUGH INNOVATIONS IN CHEMISTRY"

Citation: For Activity-Based Protein Profiling & Covalent Drug Discovery

Friday, April 11, 2025
St. John's University, Queens NY

1:00 p.m. **Welcome**
Professor Eric P. Chang, 2025 Chair, ACS New York Section, Pace University

1:05 p.m. **Greetings from St. John's University**

1:10 p.m. **Opening of the Distinguished Symposium**
Mr. Joseph Weiner, 2025 Chair-elect, ACS New York Section, PepsiCo

1:15 p.m. **Chemical Tools for Uncovering New Redox Biology at the Host–Microbe Interface**
Professor Stavroula Hatzios, Yale University
Microbial infections stimulate the production of molecular oxidants that can contribute to the development of life-threatening diseases including gastrointestinal cancers. However, it is largely unknown how these oxidants influence cell signaling at the host–microbe interface. Understanding how microbial and host cells respond to oxidative stress during infection could inspire new strategies for detecting and treating associated inflammatory pathologies. In this talk, I will present some of our recent work developing reactivity-guided proteomic and metabolomic approaches to uncover redox-regulated proteins and small molecules that influence cellular physiology at the host–microbe interface.

2:00 p.m. **Chemical Approaches to Studying Chromatin**
Professor Tom Muir, Princeton University
The field of epigenetics has exploded over the last two decades revealing an astonishing level of complexity in the way genetic information is stored and accessed in eukaryotes. This expansion of knowledge, very much ongoing, has been made possible by the availability of ever more sensitive and precise molecular tools, including those grounded in the field of chemistry. In this presentation, I will discuss the development of new chemical biology approaches designed to explore spatiotemporal aspects of epigenetic regulation. These methods are helping to expose the remarkable nuances (and vulnerabilities) of epigenetic control mechanisms, providing insights into how these processes become corrupted in disease settings.

2:45 p.m. **Coffee Break**

3:15 p.m. **Systematic Chemical Diversity to Enable Biological Discovery**
Professor Damian Young, Baylor College of Medicine
Small-molecule screening collections are typically assembled toward the goal of providing hits across a broad spectrum of unrelated biological targets. Systematic Chemical Diversity (SCD) is a guiding synthetic logic for generating a family of compounds based on methodical substitutions around a single Csp3-enriiched heterocyclic scaffold. The Csp3 atoms provide 3-dimensional vectors which can be systematically substituted based on regiochemistry, relative and absolute stereochemistry, and group identity to generate a set of complex products. The systematic variation of these structural features on a common scaffold efficiently enables hit discovery toward a wide range of targets and simultaneously provides deep structure-activity relationships. The lecture will illustrate the application of SCD to Fragment-Based Drug Discovery (FBDD), DNA-Encoded Libraries (DEL) and Activity-Based Protein Profiling (ABPP).

4:00 p.m. **Tales of Atypical Ligand Discovery by Activity-Based Protein Profiling**
Professor Benjamin F. Cravatt, The Scripps Research Institute
The activity-based protein profiling (ABPP) technology enables global analysis of small molecule-protein interactions in native biological systems and has facilitated the discovery of a wide variety of chemical probes and drug candidates. In this lecture, I will describe our lab's efforts to apply ABPP for the discovery of covalent ligands targeting historically challenging protein classes. Case studies will be presented that underscore the diverse ways that covalent ligands can engage and alter the functions of proteins in human cells. Learnings from these efforts will also be shared and should highlight allostery as a rich source for new chemical probes, as well as the importance of screening small molecules in living systems to maximally illuminate the ligandability of the proteome.

5:00 p.m. **Complimentary Reception for all Attendees and Speakers**

6:30 p.m. **Medal Award Ceremony** **(see next page)**

MEDAL AWARD CEREMONY
6:30 p.m. – 7:30 p.m.

Presiding:	**Dr. Eric P. Chang** 2025 Chair, ACS New York Section
ACS Greetings:	**Dr. Dorothy Phillips**, ACS President **Mr. Albert Horvath,** ACS Chief Executive Officer
Introductory Address:	**Nancy Thornberry**, Kallyope
Presentation of the Medal:	**Dr. Eric P. Chang**
Acceptance Address:	**Dr. Benjamin F. Cravatt** **Nichols Medalist**

For More Information: Please visit the New York Section website at http://newyorkacs.online/nichols_medal/

DR. BENJAMIN F. CRAVATT

2025 Nichols Medalist

Dr. Benjamin 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 biochemical pathways that play important roles in human physiology and disease. 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 co-founder of several biotechnology companies, including Activx Biosciences, Abide Therapeutics, Vividion Therapeutics, Boundless Bio, and Belharra Therapeutics. Dr. Cravatt's honors include a Searle Scholar Award, the Eli Lilly Award in Biological Chemistry, the ASBMB Merck Award, AACR Award for Achievement in Chemistry in Cancer Research, the Wolf Prize in Chemistry, the Heinrich Wieland Prize, and memberships in the National Academies of Medicine and Sciences.

THE WILLIAM H. NICHOLS MEDAL AWARD

Dr. William H. Nichols, a charter member of the American Chemical Society and its president in 1918 and 1919, was a pioneer in the development of the chemical industry in the United States and an early champion of the importance of chemistry in the future growth of the nation. The success of his companies can be traced to several notable principles that guided Dr. Nichols' career. First was his deep belief in research and development. Second was his support for science education and the students of chemistry. Third was his concern for the welfare of his employees. Overriding all of these was his often-quoted belief that "the Golden Rule is as applicable in business as it is in church." It is this legacy of Dr. William H. Nichols that the New York Section is proud to maintain in its annual award of the Nichols Medal each spring.

It was in 1902, that Dr. Nichols established this annual award, the first in its field, of a gold medal to be presented to a chemical scientist for original research. The William H. Nichols Medal was first awarded in 1903. Since its inception, the New York Section of the American Chemical Society has administered the award. It has been perpetuated through the generosity of Dr. Nichols, his family, and the Nichols Foundation, Inc. The award ceremony has evolved into a Distinguished Symposium and a Medal Award Banquet during which scientists can interact with their colleagues and with chemistry students. The Nichols Medal itself depicts the allegorical figure of Dr. Faust in his laboratory as described by Goethe, and the obverse side bears an inscription of the name of the medalist and the award citation. A listing of all the William H. Nichols Medalists and their medal citations can be found at www.newyorkacs.org/nicholsmedalists.html.

Supported in part by the William H. Nichols Fund for Chemistry at the Boston Foundation

REGISTRATION

Online registration using PAYPAL for payment is available at
www.newyorkacs.online/nichols_medal

Or use the Tear Off reservation form at this line **RESERVATIONS DEADLINE – APRIL 1, 2025**

MAIL RESERVATIONS TO:

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C/O Bernadette Taylor
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http://www.NewYorkACS.online
Phone: 732-770-7324
E-mail: btaylor@newyorkacs.org

		Number	Total
Symposium & Reception:	**$60 (ACS Members / $40 non-members)**	_____	**$**_____
Non-Member	**$85**	_____	**$**_____
Student, unemployed, retired	**$35**	_____	**$**_____
50-year ACS member	**$0**	_____	**$**_____

Tickets will be available for pick up onsite at the registration table.

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