2016 COPE AND COPE SCHOLAR AWARD WINNERS

Recipients are **HONORED FOR CONTRIBUTIONS** of major significance to chemistry

EDITED BY LINDA WANG

THE FOLLOWING VIGNETTES highlight the recipients of the Arthur C. Cope Award and the Arthur C. Cope Scholar Awards, administered by the American Chemical Society for 2016. Vignettes for the rest of the ACS national award recipients were published in the Jan. 4 issue of C&EN.

Recipients of the Cope award and Cope Scholar awards will be honored at a ceremony at the fall ACS national meeting in Philadelphia on Aug. 21–25.

ARTHUR C. COPE AWARD: ERIC N. JACOBSEN

Sponsor: Arthur C. Cope Fund

Citation: For his contributions, both fundamental and practical, to the fields of asymmetric catalysis and organic synthesis.

Current position: Sheldon Emery Professor of Chemistry, Harvard University

Education: B.S., chemistry, New York University; Ph.D., chemistry, University of California, Berkeley

Jacobsen on his current scientific goals: *"I am very excited about connecting the worlds of small-molecule and enzymatic catalysis in meaningful ways. I hope to discover small, synthetic catalysts that use enzymatic principles to do reactions that have thus far not been possible."*

What his colleagues say: *"Jacobsen's catalyst systems have been used widely in industry and academia, and the underlying concepts he has elucidated now serve to guide research throughout the world."*—Stephen L. Buchwald, Massachusetts Institute of Technology

ARTHUR C. COPE SCHOLAR AWARDS

Sponsor: Arthur C. Cope Fund

TAKAHIKO AKIYAMA

Citation: For outstanding contributions to organic chemistry, in particular, in the development of chiral Brønsted acid catalysts.

Current position: professor of chemistry, Gakushuin University

Education: B.S., Ph.D., chemistry, University of Tokyo

Akiyama on his scientific mentor: *"Professor Teruaki Mukaiyama, who was my Ph.D. adviser, is my scientific role model. He always stressed the importance of finding novel synthetic reactions from scratch rather than improving the known reactions."*

What his colleagues say: *"On the basis of his established impact on the field of enantioselective organic synthesis and for his outstanding contributions to the field of organic chemistry, I can think of no other chemist in his age group more deserving of this prestigious award."*—Michael Krische, University of Texas, Austin

KRISTI S. ANSETH

Citation: For innovation and creativity in the development of novel methods to control the location and timing of chemical modifications of biomaterials.

Current position: Distinguished Professor, chemical and biological engineering, University of Colorado, Boulder

Education: B.S., chemical engineering, Purdue University; Ph.D., chemical engineering, University of Colorado, Boulder

Anseth on what inspires her: *"I enjoy meeting new scientists and engineers, especially those with backgrounds that are different from mine. These interactions make me think about problems differently or see how our group's expertise might be applied in new ways. While it can be difficult to stretch your thinking or go outside of your comfort zone, I have found these types of interactions to be the most stimulating and rewarding."*

What her colleagues say: *"Professor Anseth's incredibly innovative work developing dynamically tunable materials to study cell fate and function has advanced organic chemistry. Anseth is an ideal role model for all organic chemists, from the exciting nature of her work to her productivity to her commitment to training and education."*—Adah Almutairi, University of California, San Diego

GEERT-JAN BOONS

Citation: For seminal contributions to glycoscience by developing novel methods for oligosaccharide assembly, preparation of important glycoconjugates, and their use in biological studies.

Current position: UGA Foundation Distinguished Professor in Biomedical Sciences, University of Georgia; professor and chair, department of medicinal chemistry and chemical biology, Utrecht University

Education: B.S. and M.Sc., chemistry, Ph.D., synthetic carbohydrate chemistry, Leiden University

Boons on his biggest research challenge: *"Design, synthesis, and immunological evaluation of a multicomponent vaccine that could break immunotolerance to a tumor-associated glycopeptide epitope and elicit innate, cellular, and humoral immune responses. The ultimate aim of this program is to develop a therapeutic vaccine for cancer based on a type of glycosylation uniquely found on cancer cells."*

What his colleagues say: *"Dr. Boons's prolific contributions to glycoscience have earned him a highly respected international reputation as a leader in the field. The high research productivity of Dr. Boons is matched by his ability to train graduate students and*

postdoctoral researchers."—Paul Schleyer, University of Georgia

LUIS M. CAMPOS

Citation: For pioneering work in the synthesis of functional organic materials that are capable of singlet fission, a key mechanism for third-generation solar cells.

Current position: assistant professor of chemistry, Columbia University

Education: B.S., chemistry, California State University, Dominguez Hills; Ph.D., chemistry and biochemistry, University of California, Los Angeles

Campos on what excites him: *"Talking to my students and other scientists who do research outside of my field. I get excited with challenges that address multidisciplinary fields, where we contribute by designing organic materials that impact organic electronics or biomaterials."*

What his colleagues say: *"Luis brings an innovative perspective to organic chemistry. Building on his strengths in physical organic chemistry, his research focuses on the synthesis of polymers for a diverse range of applications using nonconventional building blocks. He is the complete package—outstanding scholarship, groundbreaking research, inspiring teacher, and a true builder of the 21st-century chemistry community."*—Craig Hawker, University of California, Santa Barbara

SETH M. COHEN

Citation: For advancements in the post-synthetic modification of metal-organic frameworks, and for insights into the identification of innovative pharmacophores for the development of metalloprotein inhibitors.

Current position: professor of chemistry and biochemistry, University of California, San Diego

Education: B.S., chemistry, B.A., political science, Stanford University; Ph.D., inorganic chemistry, University of California, Berkeley

Cohen's scientific role model: *"My early scientific role models were the great scientific 'communicators' of the 1980s—Carl Sagan, David Attenborough, and also my parents, who encouraged me to do well in school and pursue a career in science. ... Later in my life ... my Ph.D. (Kenneth Raymond) and postdoctoral (Stephen Lippard) advisers were my role models—from each of them I learned and adopted certain traits to become the best researcher, educator, and mentor I can be."*

What his colleagues say: *"The broad impact of professor Cohen's work in two diverse areas of organic chemistry is due to his ability to recognize important problems in contemporary chemistry and apply elegant and generalizable synthetic strategies to address them."*—Jonathan L. Sessler, University of Texas, Austin

MATTHEW GAUNT

Citation: For seminal contributions to reaction development using both organic and metal catalysts.

Current position: professor of chemistry, University of Cambridge

Education: B.Sc., chemistry, University of Birmingham; Ph.D., chemistry, University of Cambridge

Gaunt on receiving this award: *"This award is a great honor and is a testament to the contributions of a phenomenally talented group of students and postdoctoral researchers. They strive to make new discoveries in uncharted areas of chemical research, when at the outset we don't necessarily know where things will go or what we will achieve. I don't know what we will accomplish in the coming years, but we will keep enjoying our research, continue to ask new questions, try to define new problems, and then see what happens."*

What his colleagues say: *"C–H activation is a rapidly evolving field that promises to have a major impact in catalysis and synthesis. Matt is a key player in this highly competitive field. Most important, he made his own distinct contributions in several directions related to both catalysis and synthetic applications of C–H activation methods."*—Jin-Quan Yu, Scripps Research Institute, California

MARC GREENBERG

Citation: For significant research contributions toward a mechanistic understanding of DNA damage and repair processes that impact human health.

Current position: professor of chemistry, Johns Hopkins University

Education: B.S., chemistry, New York University; B.E., chemical engineering, Cooper Union School of Engineering; Ph.D., chemistry, Yale University

Greenberg on what he hopes to accomplish in the next decade: *"In terms of our current research program, I hope to demonstrate that at least some of what we have learned about nucleic acid damage and repair in the test tube occurs in cells, thus providing a more direct link to human health. We are also constantly trying new projects that, if successful, will lead us in entirely new research directions. Ten years from now, I hope to be carrying out research that the community would never have predicted we would be involved in."*

What his colleagues say: *"Greenberg is a respected leader in his field. His work is important, scholarly, and a powerful example of how mechanistic organic chemistry impacts human medicine. His contributions reveal information about DNA lesions that can give rise to cancer, and it uncovers pathways of biological response and damage repair that are potential drug targets for cancer therapy."*—Peter B. Dervan, California Institute of Technology

THOMAS KODADEK

Citation: For exemplary work in elucidating and manipulating important biological pathways using novel chemical and biochemical tools.

Current position: professor of chemistry and cancer biology, Scripps Research Institute, Florida

Education: B.S., chemistry, University of Miami; Ph.D., organic chemistry, Stanford University

Kodadek on what he hopes to accomplish in the next decade: *"I've learned how long it takes to accomplish something really important, so 10 years no longer seems like such a long time. Nonetheless, I hope that*

we will have a new type of high-throughput screening system that would routinely provide high-affinity and -selectivity synthetic ligands to almost any biomolecule that one wished to target. Then use this system to discover antibody biomarkers that would enable the early diagnosis of many different diseases."

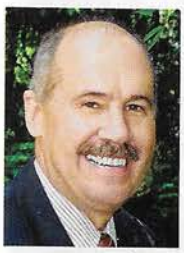
What his colleagues say: *"Tom Kodadek has been a leading figure in the field of chemical biology for more than two decades, and he continues to push the frontiers of this field in exciting new directions through innovative technology development and a firm commitment to rigorous mechanistic understanding of complex biological processes."*—Benjamin Cravatt, Scripps Research Institute, California

LAWRENCE T. SCOTT

Citation: For pioneering research on the synthesis, properties, and chemical behavior of carbon-rich cyclic and polycyclic organic compounds.

Current position: professor emeritus, Boston College; adjunct professor, University of Nevada, Reno; visiting professor, Nagoya University

Education: A.B., chemistry, Princeton University; Ph.D., organic chemistry, Harvard University



Scott on his scientific role model: *"My scientific role model is the late R. B. Woodward, my Ph.D. adviser at Harvard. The elegance and sheer beauty of his legendary total syntheses inspired countless chemists in my generation, and others who followed, to emulate his supreme mastery of the art form that he pioneered in chemistry. Furthermore, Woodward's command of the English language and storytelling skills made his lectures mesmerizing and his published papers a joy to read. It terrified me to know that professor Woodward would be the first person to read my Ph.D. dissertation. Throughout my 44-year career as a university professor, I labored over every manuscript as though it would be read first by professor Woodward."*

What his colleagues say: *"Larry Scott has blazed new trails in organic chemistry; his impact on the discipline has been exemplary. The significance of his creative and groundbreaking research and its potential benefits to society becomes more evident with each passing year during which the field of carbon-based materials continues to evolve and gain prominence."*—Amir Hoveyda, Boston College

DAVID A. SPIEGEL

Citation: For pioneering work in the development of synthetic systems that modulate the human immune system.

Current position: professor of chemistry and pharmacology, Yale University

Education: A.B., chemistry, Harvard University; M.Phil., pharmacology, Yale University; Ph.D., chemistry, Yale University; M.D., medicine/psychiatry, Yale University

Spiegel on his scientific role model: *"My grandfather, Harold N. Shapiro. He was a professor of mathematics at the Courant Institute of New York University for over 60 years, and his contributions spanned both pure and applied topics. He made science exciting to me from a very young age and was a wonderful human being. I'm honored that he and I coauthored a paper in 2013."*

What his colleagues say: *"Dr. Spiegel is an exceptional candidate for this award because of his absolutely first-rate scholarship and high-impact research program at the interface between organic chemistry and immunobiology."*—Jonathan Ellman, Yale University

CALL FOR NOMINATIONS FOR INORGANIC NANOSCIENCE AWARD

The Nanoscience Subdivision of the ACS Division of Inorganic Chemistry (DIC) seeks nominations for the Inorganic Nanoscience Award, sponsored by the University of South Carolina NanoCenter. The award consists of $3,000 made out to the winner, as well as a plaque to be presented to the recipient at the fall ACS National meeting in Philadelphia.

Nominations should include a curriculum vitae, a list of publications, and a short statement that highlights the key research discoveries that merit a national award in the area of inorganic nanoscience. Each nominee should also arrange for three letters of support to be sent separately. Only one of the three supporting letters can be from the nominee's home institution.

E-mail PDFs of nominations and letters of support to Sara Skrabalak, Nanoscience Subdivision chair, at nanoawards@acsdic.org. Inquiries (but not nomination materials) can be addressed to Sarah Stoll at sls55@georgetown.edu. The deadline for nominations is Jan. 25.

HEROES OF CHEMISTRY OPEN FOR NOMINATIONS

Nominations are being sought for the 2016 ACS Heroes of Chemistry awards, which recognize industrial chemical scientists whose work in chemistry or chemical engineering has led to the successful development of commercial products. Any private or publicly owned for-profit company may nominate an individual chemist, biochemist, chemical engineer, or team of scientists who played a vital role in the research and development of a commercial product that has had a dramatic impact on the welfare and progress of humanity. Nominees must demonstrate significant and lasting contributions through their work in chemistry. The deadline for submissions is March 21. Award recipients will be honored at the 2016 fall ACS national meeting in Philadelphia. For details, visit www.acs.org/heroes.

NOMINATIONS SOUGHT FOR NORRIS AWARD

Nominations are being accepted for the 2016 James Flack Norris Award for Outstanding Achievement in the Teaching of Chemistry. The award is given annually by the ACS Northeastern Section and consists of a certificate and $3,000 honorarium.

Nominations should focus on the candidate's contributions to and effectiveness in teaching chemistry. The package must include a primary nomination letter, supporting letters, and the candidate's curriculum vitae.

Send nomination packets electronically in PDF format to Anna Singer at secretary@nesacs.org. For more information, visit www.nesacs.org/awards_norris.html. Nominations are due by April 15.

LINDA WANG *compiles this section. Announcements of awards may be sent to l_wang@acs.org.*