Guangbin Dong

Citation: For his outstanding accomplishments on transition-metal catalyzed synthetic methods involving carbon-carbon and carbon-hydrogen bond activation.

Current position: professor of chemistry, University of Chicago

Education: B.S., chemistry, Peking University; Ph.D., chemistry, Stanford University

Dong on what gets his creative juices flowing: "It often starts with a good question being asked by either the students or myself. Some questions are purely driven by curiosity; others are driven by known unsolved problems. These questions provide inspiration for creating new approaches."

What his colleagues say: "His creativity and insights establish him as one of the very best young organic chemists in his generation."—Stephen F. Martin, University of Texas, Austin

P. Andrew Evans

Citation: For his development of innovative rhodium-catalyzed reactions and their applications to the synthesis of biologically relevant complex molecules.

Current position: professor and Alfred R. Bader Chair of Organic Chemistry, and Tier 1 Canada Research Chair in Organic & Organometallic Chemistry, Queen's University

Education: B.Sc., applied chemistry, Newcastle Polytechnic; Ph.D., synthetic organic chemistry, University of Cambridge

Evans on what gets his creative juices flowing: "I have always been very competitive, which is why I like to work on challenging problems. I think I have done my most creative work when the initial plan has not worked out as anticipated."

What his colleagues say: "Andy has become a leader among his peers, and his star is still clearly on the rise. Although he has already made an impact in methods development, heterocyclic synthesis, and natural products synthesis, I think that it does not compare to the influence he will bear on the field in the next few years as he continues to develop allylrhodium chemistry."—Gary A. Molander, University of Pennsylvania

M.G. Finn

Citation: For the development of chemical ligation methods and platforms, applied to bioconjugation and materials chemistry.

Current position: professor and chair of chemistry and biochemistry, and professor of biology, Georgia Institute of Technology

Education: B.S., chemistry, California Institute of Technology; Ph.D., inorganic chemistry, Massachusetts Institute of Technology

Finn on what gets his creative juices flowing: "The students and postdocs that I work with, and the colleagues that I talk to. And a good problem to think about. Those are what send me to the literature, and then, every once in a while, to a good idea. The longer I'm around, the more things I find interesting, which is helpful."

What his colleagues say: "The Cu-catalyzed and in situ click chemistry work from the Finn laboratory has inspired thousands of reported applications by academic and industrial laboratories in organic, medicinal, biochemical, and materials chemistry. Professor Finn also initiated the exploration of the organic chemistry of virus-based nanoparticles and their use as platforms for biologically active polyvalent structures, leading the way to what is now a very active area of research the world over."—Mostafa A. El-Sayed, Georgia Institute of Technology

Paul J. Hergenrother

Citation: For innovative use and application of organic synthesis to solve critical problems at the frontiers of chemical biology and translational drug discovery.

Current position: Kenneth L. Rinehart Jr. Endowed Chair in Natural Products Chemistry, University of Illinois, Urbana-Champaign

Education: B.S., chemistry, University of Notre Dame; Ph.D., chemistry, University of Texas, Austin

Hergenrother on what gets his creative juices flowing: "I am most interested in understanding currently intractable problems in medicine and thinking about how we can use chemistry to solve them. We live in a special time, where genomic data now allow for an unprecedented look at the molecular features of disease, and it is up to chemists to find the right drug for the right patient."

What his colleagues say: "Hergenrother is a leader in academic compound screening and development, and in thinking about the types of compounds that should be populating compound screening collections. Typical compound collections are largely composed of small molecules that are flat and hydrophobic. He uses readily available complex natural products as the starting point for the drug discovery process and converts them to compounds of equal complexity but high diversity."—Stephen F. Martin, University of Texas, Austin

Thomas R. Hoye

Citation: For creative contributions across an impressively broad spectrum of organic chemistry, including the development of the hexadehydro-Diels-Alder (HDDA) reaction.

Current position: professor of chemistry, University of Minnesota, Twin Cities

Education: B.S., M.S., chemistry, Bucknell University; Ph.D., chemistry, Harvard University

Hoye on his biggest research challenge: "Maintaining an adequate balance between my levels of (i) commitment to research coworkers, and (ii) secured research funding, a challenge shared by many. This is exacerbated with each passing year and decade as our academic institutions, country-wide, take ever-increasing portions of research grant dollars into their central coffers via ever-escalating tuition (and overhead) rates. My first NIH R01 grant award, the direct costs of which have grown in lock-step with inflation, allowed me to support six graduate research assistants; my latest grant: three and a half."

What his colleagues say: "The sheer breadth of his program alone marks Tom as a rare breed—all the more so when considered in light of the high caliber of his contributions. Tom is one of those few whose work just keeps getting better and better. This speaks further to his dedication and full commitment to his science."—Amos B. Smith, University of Pennsylvania

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Kathlyn A. Parker

Citation: For outstanding and creative contributions to the synthesis of structurally complex organic targets.

Current position: professor of chemistry, Stony Brook University, SUNY

Education: B.A., chemistry, Northwestern University; Ph.D., organic chemistry, Stanford University

Parker on her scientific role models and why: "I have several role models who were my mentors. Jim Marshall, my chemistry teacher in college—not only is he a superbly organized lecturer but he personally taught me how to work in the lab. W. S. Johnson, who taught high standards. Gilbert Stork, who has the ability to share his thought processes ... what a teaching skill that is! And Madeleine Joullie, who is a more recent friend. Madeleine never quits, and she never loses her good humor."

CREDIT: CHARMINE YAPCHIN (PARKER); RIKEN (SODEOKA); ANDREJ LUPTAK (VANDERWAL)

What her colleagues say: "Kathy's contributions to organic synthesis place her among the notable players in this field. Her recent publications are strong and have attracted significant attention. She is known internationally for her compact and creative syntheses of complex natural product targets. Her approach is to invent novel—and efficient—solutions to challenging problems in synthesis. Her work epitomizes excellence in organic chemistry and is most certainly deserving of recognition with a Cope Scholar Award."—Nicole S. Sampson, Stony Brook University

Mikiko Sodeoka

Citation: For her seminal contributions to the fields of transition-metal chemistry, synthetic organic chemistry, organofluorine chemistry, and chemical biology through the development of innovative methodologies and tools.

Current position: chief scientist, RIKEN, Japan

Education: B.A., Ph.D., pharmaceutical science, Chiba University, Japan

Sodeoka on her scientific role models: "There are many scientists who influenced me, but if I have to choose, it is my former mentor, Professor Masakatsu Shibasaki. His enthusiasm to chemistry opened up my passion as a researcher, and I learned many important things from him. Professor Masako Nakagawa, a supervisor when I was a student, is also my role model. She was one of the rare female organic chemists in Japan at that time and showed me that women can be excellent chemists."

What her colleagues say: "Dr. Sodeoka's pioneering works and a series of publications opened a new avenue of research in transition-metal chemistry and catalysis, triggering extensive follow-up studies around the world. She has also expanded her superb synthetic skills and creative thinking to chemical biology and has been making seminal contributions."—Iwao Ojima, Stony Brook University, SUNY

Christopher D. Vanderwal

Citation: For the development of efficient chemical syntheses of structurally complex and biologically significant natural products.

Current position: professor of chemistry, University of California, Irvine

Education: B.Sc., biochemistry, M.Sc., chemistry, University of Ottawa; Ph.D., chemistry, Scripps Research Institute

Vanderwal on what he hopes to accomplish in the next decade: "I'd love to crack into something really important in biology without compromising my love of the creativity of natural product synthesis. In other words, I want to continue to spend time doing what I love best, but see (and show) its impacts."

What his colleagues say: "Chris Vanderwal's accomplishments to date, coupled with his remarkable creativity and exquisite tastes in problem selection, establish him as one of the world's leading synthetic organic chemists. The short chemical synthesis strategies introduced by Vanderwal are defining what is possible in chemical synthesis today."—Larry E. Overman, University of California, Irvine ■