

Thieme Publishers, IUPAC, and the Editors of *SYNTHESIS*, *SYNLETT*, *SYNFACTS*, and *Science of Synthesis* announce the

Thieme–IUPAC Prize

in Synthetic Organic Chemistry

2014

Martin D. Burke



We are delighted to announce that the 2014 Thieme–IUPAC Prize has been awarded to Martin D. Burke of the University of Illinois. Professor Burke becomes the 12th recipient of the prize, and joins a select group of scientists under the age of 40 years whose research has had a major impact on the field of synthetic

organic chemistry. The prize, which is presented every two years and includes an award of €5000, will be given to Martin Burke on July 1, 2014 at the ICOS-20 conference in Budapest, Hungary, after his Thieme–IUPAC lecture.

Martin Burke completed his undergraduate degree in chemistry at Johns Hopkins University in 1998, a Ph.D. in organic synthesis as a Howard Hughes Medical Institutes Graduate Fellow under the direction of Professor Stuart Schreiber at Harvard University in 2003, and an M.D. as a National Institutes of Health Fellow at Harvard Medical School in 2005, an unusual distinction for an organic chemist. That same year he began his independent career as an Assistant Professor in the Department of Chemistry at the University of Illinois at Urbana-Champaign. In 2009 his lab joined the Howard Hughes Medical Institute, in 2011 he was promoted to Associate Professor with indefinite tenure, and in 2013 he was promoted to the rank of Full Professor.

Professor Burke's research focuses on the synthesis and study of small molecules that perform protein-like functions. Such molecules may ultimately serve as substitutes for missing or dysfunctional proteins that underlie human diseases, thereby operating as prostheses on the molecular scale. To enable these studies, his group has pioneered iterative cross coupling with MIDA boronates as a strategy for making the process of complex small molecule synthesis simple, efficient, and flexible. This work has yielded more than 150 commercially available MIDA boronate building blocks, which are now being widely used by more than 70 pharmaceutical companies and many academic groups worldwide, and by one company on the process scale to

prepare a new drug candidate for human clinical trials. Martin Burke's group has most recently created a machine that makes small molecules from MIDA boronates in a fully automated fashion, and is now using this technology to broadly enable and accelerate the discovery of new medicines. Professor Burke has specifically employed the MIDA boronate platform to systematically study the ion-channel-forming small-molecule natural product amphotericin B. This program has yielded a major revision in the mechanism of action of this clinically vital but also highly toxic antifungal agent, the first amphotericin derivative that retains potent antifungal activity but is nontoxic to human cells and which is now undergoing extensive preclinical evaluation. Marty's program ultimately seeks to help shift the rate-limiting step in small-molecule science from synthesis to function and develop *molecular prosthetics* into a general strategy for promoting the understanding and betterment of human health.

We heartily congratulate Martin Burke and look forward to hearing the latest exciting developments from his laboratories, an *Account* of which will be published in *Synlett*, at his award lecture in Budapest, Hungary.

Members of the 2014 Selection Committee:

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M. Krische Austin, TX, USA	D. W. C. MacMillan Princeton, NJ, USA
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S. Murai Nara, Japan	J. Wölfling Szeged, Hungary



Thieme–IUPAC Prize **2014** in Synthetic Organic Chemistry

2012

Melanie S. Sanford

University of Michigan



2010

Phil S. Baran

Scripps Research Institute



2008

F. Dean Toste

University of California, Berkeley



2006

David W.C. MacMillan

California Institute of Technology



2004

John F. Hartwig

Yale



2002

Erick M. Carreira

ETH Zürich



2000

Alois Fürstner

Max-Planck-Institut für Kohlenforschung



1998

Andrew G. Myers

California Institute of Technology



1996

Eric N. Jacobsen

Harvard



1994

Paul Knochel

Marburg



1992

Stuart L. Schreiber

Harvard



Members of past Selection Committees

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