JOC The Journal of Organic Chemistry

Editorial

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Editorial for *The Journal of Organic Chemistry*

I am delighted to assume the role of Editor-in-Chief for *The Journal of Organic Chemistry*. My fascination for the subject began in the classroom of Prof. William von Eggers Doering in 1986, at the start of Chemistry 20, "An Introduction to Organic Chemistry". Prof. von Doering did a masterful job of introducing our class to the precepts of structure, bonding, and rudimentary molecular orbital theory, some of the logic of synthesis, and he introduced a bit of the logic of mechanistic thinking about reactions. But most of all, on the very first day, he spoke of his role as the instructor for the course—to share what we (in the organic community) know, what we can imagine about why and how, and most of all to remember that everything he was about to tell us was a model. And as such, what was being taught was subject to change, as better, more comprehensive, and more accurate models came along. I am very happy to serve my colleagues and the field of organic chemistry through *The Journal of Organic Chemistry* in this very same spirit. We are privileged to study so complicated and nuanced a subject. Moreover, I see our subject as entering a remarkable period of mechanistic sophistication. The nature of problems that can be addressed, with progress emerging beyond the incremental, is expanding. It is an extra source of fascination that our subject turns out to be so useful and important to other fields of science. Biological and materials-oriented sciences, if not the environment itself, depend mightily on the increasing sophistication of organic chemistry.

I am also assuming the job with a sense of deep appreciation. I am so pleased to thank C. Dale Poulter and his team for their stewardship of *J. Org. Chem.* through a most successful period in the history of organic chemistry. Through this very busy era, *J. Org. Chem.* has maintained an outstanding place in the scientific community, with the highest standards for experimental data. It has been common, as long as I have been a practitioner in the field, to hear colleagues assert that, if it is in *J. Org. Chem.*, it is valid and repeatable. So too, *J. Org. Chem.* has been a place for the proverbial, scholarly full paper, with Articles that have routinely "gone deep", defining not only proof-of-principle, but the scope of a method, the basis of a mechanism, or the reach of a technique. An Article in *J. Org. Chem.* has been a signature of not only rigor but also of depth and range. For this foundation, in 2017, I again express my thanks to C. Dale Poulter and his entire team, including several Associate Editors completing long and distinguished terms. Robert Boeckman, Dave Collum, Daniel Comins, Jacqueline Gervay-Hague, and Al Padwa have all contributed mightily to the present position of *J. Org. Chem.* as an outstanding institution in our field. In addition to their long-term service to the journal, each of these individuals has been generous toward me with their wisdom and good wishes for the future.

When *The Journal of Organic Chemistry* came into being in 1936, we knew what organic chemistry was: an organizing set of principles that helped scientists conceptualize matter, the molecule, and interconversion of one type of molecule to another. There was a focus on compounds of carbon. There was a sense that these were the molecules that would ultimately be understood to underpin the chemistry of living systems. Structure determination, reactivity, synthesis, and mechanism—these were the central activities of organic chemists.

In 2017, these tenets hold true, and yet the purview of the field has expanded over the course of 80 years in ways that could not have been anticipated. Diffusion to the left, to the right, and downward in the Periodic Table has has enlarged the universe of organic chemistry. The rise of catalysis, conceptualized by Berzelius almost exactly 100 years prior to the birth of *J. Org. Chem.*,[1] is emblematic of the modern scope of organic chemistry. Indeed, both metallic and nonmetallic compounds and enzymes were found to express their dominion over the fundamental essence of chemistry, the interconversion of matter in energetically accessible and efficient ways. Today, organic chemistry is the culmination of legion and landmark contributions to the field of catalysis, as the nexus of molecular function in both biological science and modern materials science. In many respects, the success of organic chemistry is synonymous with the triumph of the molecule as perhaps the most pervasive scientific concept throughout all time, as has been implied by Professor K. C. Nicolaou in his remarkable essay.[2]

J. Org. Chem. has played a vital role in the grounding and eventual flourishing and diversification of our field. On an entirely personal level, I have always viewed *J. Org. Chem.* as a pillar. My first detailed paper as a graduate student concerning the total synthesis of the antibiotic macbecin appeared in *J. Org. Chem.*,[3] as did the first paper from my independent lab, on the diastereoselective coupling of enolsilanes.[4] More recently in *J. Org. Chem.*, my group has reported the crystal structure of a peptide-based catalyst bound to its vancomycin-like substrate.[5] This last paper disclosed a technique for observing catalyst–substrate complexes, employing fusion of a catalyst to a highly crystalline carrier protein. It is interesting to me personally to reflect on the range of topics we have examined. My laboratory today, like so many others, seeks to contribute to both the heart of the field and its interdisciplinary reaches. As we have endeavored to contribute along this path, I have marveled at the pace of progress in organic chemistry. I recount four remarkable group meetings with my young research group as the calendar turned from 1999 to 2000, Y2K. In four successive weeks, the students broke up into four groups and were instructed simply to browse journal articles in the field of organic chemistry. Group 1 was to focus exclusively on the year 1970; Group 2, exclusively on 1980; Group 3 on 1990; Group 4 on 2000. In fact, my students and I saw the field was essentially transformed, decade-by-decade. Each successive week, there was little resemblance to the last, as we considered the ways people made molecules, the sophistication of reagents, the complexity of makeable things, and the reach of the science itself. Day to day in the lab, perhaps we feel that our science moves slowly. Decade by decade, organic chemistry is transformed into something new, of greater consequence, as

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the promise of atom-by-atom precision synthesis and functional design moves closer at hand.

Perhaps it is time to hold these group meetings again, with an installment added for 2010, and one soon thereafter in anticipation for 2020. Perhaps there is a way, as a midcareer scientist, or perhaps as an Editor-in-Chief, to make these realizations as inspirational for the world as they were, and are, for my group and me. *J. Org. Chem.* is poised to play this inspirational role, continuing its tradition of excellence many decades into the future.

My goals for *J. Org. Chem.* begin humbly, and I hope will evolve over time. Surely one goal is to strive to ensure that *J. Org. Chem.* remains aligned with the rapidly evolving agenda in the field. The purview of the field will surely continue to cover a staggering range of science. The discovery and development of new reactions, and the determination of their mechanisms, stands to remain an intense focus of *J. Org. Chem.* So too, all manner of organic synthesis, molecule assembly, and properties will remain an extensive focus for *J. Org. Chem.* The journal will continue to strive to publish Articles describing comprehensive explorations of complex molecule synthesis, new reactions and methods, natural and unnatural products, increasingly complex druglike substances, materials, and all manner of oligomers—whether biological, biomimetic, or initially generated entirely in the mind's eye. Studies of mechanism remain incredibly important to our field, and a new era in physical organic chemistry is unfolding as new experimental and computational techniques become more accessible to colleagues across the discipline. In addition, contributions from the field of biosynthesis continue to boggle the mind and expand our concept of what organic chemistry is. The characterization of additional, emergent phenomena of organic structures in the context of organic materials also represents a frontier for the field. The Associate Editors and I are committed to the broad reach of *J. Org. Chem.* in service of a field with incredible depth and broadening interdisciplinary horizons.

Colleagues across academic, industrial, and governmental agencies are all producing outstanding organic chemistry. I sense also that we are entering, for various reasons, a period of unprecedented collaboration between industry and academia. My own lab has experienced tremendous synergy with industrial colleagues over the past few years, and it seems there is every reason to believe collaborations will expand. Often, though not always, technical papers emerge. I am hopeful to see *J. Org. Chem.* on the leading edge of capturing ever more of the science describing the genesis, achievements, and opportunities created by colleagues not only in their own sectors, but also collaborating through new and developing modes of doing science.

To assist in the stewardship of this incredibly broad swath of scientific space, I am delighted to work with a first class team of continuing and new Associate Editors and Editorial Advisory Board members. I am very pleased to welcome four new Associate Editors who bring exciting new perspective and expertise to the journal:

Donna Blackmond (The Scripps Research Institute): Professor Blackmond earned a Ph.D. in Chemical Engineering from Carnegie-Mellon University in 1984 and started her independent career as an Assistant Professor of Chemical Engineering at the University of Pittsburgh in the same year. She was promoted to Associate Professor in 1989 and has subsequently held professorships in chemical engineering and in organic, physical, and technical chemistry in the US, Germany, and the UK, and has worked in the pharmaceutical industry as an Associate Director at Merck & Co., Inc. In 2010, she moved from a joint Research Chair in Chemistry and Chemical Engineering at Imperial College London to her present position as Professor of Chemistry at The Scripps Research Institute in La Jolla, CA. Professor Blackmond's research focuses on kinetic, mechanistic, and reaction engineering studies of organic reactions for pharmaceutical applications, including asymmetric catalysis. Professor Blackmond also carries out fundamental studies probing the origin of the single chirality of biological molecules. Professor Blackmond's most recent *J. Org. Chem.* publication was in collaboration with Tamas Benkovics and colleagues from Bristol-Myers Squibb, on mechanistic insights into the vanadium-catalyzed achmatowicz rearrangement of furfurol.[6]

Masayuki Inoue (Graduate School of Pharmaceutical Sciences, The University of Tokyo): Professor Inoue obtained his Ph.D. from the University of Tokyo in 1998, working under the supervision of Prof. Kazuo Tachibana. After spending two years with Prof. Samuel J. Danishefsky at the Sloan-Kettering Institute for Cancer Research (1998−2000), Professor Inoue joined the Graduate School of Science at Tohoku University as an Assistant Professor in the research group of Prof. Masahiro Hirama. At Tohoku University, Professor Inoue was promoted to Lecturer in 2003 and then to Associate Professor in 2004. In 2007, he moved to the Graduate School of Pharmaceutical Sciences, The University of Tokyo, as a full Professor. His research interests include the synthesis, design, and study of biologically important molecules, with particular emphasis on the total synthesis of structurally complex natural products. Professor Inoue's most recent contribution to *J. Org. Chem.*[7] was on construction of the fused pentacycle of talatisamine, a C19-diterpenoid alkaloids, via a combination of radical and cationic cyclizations.

Tek Peng Loh (Nanyang Technological University/Nanjing Tech University): Professor Loh earned his Ph.D. from Harvard University in 1994 under the supervision of E. J. Corey, studying chiral catalysts for enantioselective reactions and the stereocontrolled total synthesis of epibatidine. Professor Loh then went on to take an assistant professorship at National University of Singapore and became a full Professor in 2004. From 2002 to 2003, Professor Loh was jointly visiting professor at Columbia University Medical School and commenced an adjunct professorship at Soochow University, which he presently holds. He is also currently a thousand talent award professor at University of Science and Technology and Nanjing Tech University. In 2005, Professor Loh moved to his current position as full Professor at Nanyang Technological University. Professor Loh was Professor and Head of the Division of Chemistry and Biological Chemistry until 2008, when he moved on to become Professor and Associate Research Chair (2012) in the School of Physical and Mathematical Sciences. His research interests include the development of new reactions, asymmetric catalysis, green chemistry, biomimetic reactions, chemical genetics, and total synthesis of architecturally complex organic molecules with interesting biological activities. One of Professor Loh's recent contributions in *J. Org. Chem.* concerned indium−copper and indium−silver mediated Barbier−Grignard-type alkylation of aldehydes in water.[8]

Debabrata Maiti (Indian Institute of Technology Bombay, India): Professor Maiti is the first Associate Editor of *The Journal of Organic Chemistry* from India. Professor Maiti earned

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his Ph.D. in 2008 from Johns Hopkins University, studying copper oxygen and copper sulfur chemistry with Prof. Kenneth. D. Karlin. Professor Maiti then went on to study organometallic catalysis as a postdoctoral researcher with Prof. Stephen L. Buchwald at the Massachusetts Institute of Technology (MIT). After two and half years at MIT, Professor Maiti returned to India in 2010 as an Assistant Professor at the Indian Institute of Technology Bombay (IIT Bombay), where he is currently serving as an Associate Professor. Professor Maiti's independent research is aimed at solving long-standing classical problems in the field of organometallic catalysis and synthetic methodology. His most notable contributions in this regard are the template assisted distal C−H activation of arenes, stereoselective olefin nitration, heterocycle synthesis by multiple C−H functionalization, and orthogonally selective olefination−allylation with unactivated aliphatic olefins. Professor Maiti's most recent *J. Org. Chem.* publication was on the iron-catalyzed regioselective direct arylation of *N*-alkyl-2-pyridone.[9]

In addition, in line with the continuing vision for the journal, *J. Org. Chem.* will seek to recruit in 2017 Editorial expertise in the areas of materials and natural products and their biosynthesis.

Quintessentially, another goal is to preserve *J. Org. Chem.* as a standard setter for our field in terms of experimental rigor. The inclusion of an Experimental Section in manuscripts, as opposed to total deposition in the Supporting Information, remains one of the most powerful and effective manifestations of these values. At the same time, we will strive in collaboration with our colleagues at other ACS journals to define and maintain best practices for data checking, and of course, we wish to project these practices as a strength for our journal and for our community.

J. Org. Chem. presently publishes several types of content. A full Article will surely remain celebrated as the signature and flagship contribution to the journal, with the understanding that the deep scholarship of a definitive paper can influence the field in important ways. The Note will also be retained, although its scope is being clarified and expanded. Presently a highly focused study that is intended to close the book on an important aspect of organic chemistry, we are expanding the definition of the Note to include an in-depth study of a singular reaction or observation of particularly high interest. Critical aspects will include novelty, reproducibility, and mechanistic intrigue. The Perspective and *JOC*Synopsis, representing personal surveys and mini-reviews on key topics, also remain valuable content for the journal.

Two changes are effective for *J. Org. Chem.* content in 2017. The first change is the discontinuation of Brief Communications. Notwithstanding the excellent work that has been published via this content type, the overlap with other formats in the journal remains a source of confusion to authors. We hope that the reenvisioned Note will serve as a valuable forum for publishing work of unusual novelty and urgency. Acknowledging that electronic literature searching has introduced a wealth of valuable tools and resources, the journal will also no longer provide Recent Reviews summaries.

In closing, my hope for *J. Org. Chem.* is to see it flourish as it has historically and in some new ways in the future. The beauty and mystery of organic chemistry is the basis for my optimism. It is well to remember that the case for chemistry is often indirect, with spectroscopy, synthesis, and functional analysis continuously trying to link hypothesis, experiment, and theory. The reach of organic chemistry is phenomenal. Yet, as I tell my students, to me it still feels like a field not so far from its origin. In ten years, today's research will look quite primitive. In another ten years, yet again. *J. Org. Chem.* has a vital role to play in stimulating and chronicling the journey.

Scott J. Miller, Editor-in-Chief

AUTHOR INFORMATION

Notes

Views expressed in this editorial are those of the author and not necessarily the views of the ACS.

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