

## VOLUME EDITORS

---



Tadhg Begley obtained his BSc from the National University of Ireland in Cork in 1977 and his Ph.D. from the California Institute of Technology (P. Dervan) in 1982. He carried out postdoctoral studies at the University of Geneva (W. Oppolzer) and at MIT (C. Walsh). After 23 years in the Cornell Chemistry Department, he recently moved to Texas A&M University where he is the Derek H. R. Barton Professor of Chemistry. Begley's research is focused on the mechanistic enzymology of complex organic transformations, particularly those found on the vitamin biosynthetic pathways.

Dr. Begley has a keen interest in the development of chemical biology. He has helped organize several major conferences and is the co-organizer (with John Schwab, NIH) of the NIH Young Faculty Mentoring Workshop. He is a member of the editorial boards for *Molecular Biosystems*, *Vitamins and Hormones*, *Bioorganic Chemistry*, *Chemical Biology and Drug Design*, and the *Wiley Encyclopedia of Chemical Biology* and has recently coauthored, with John McMurry, *The Organic Chemistry of Biological Pathways*.



Phillip Crews is currently Distinguished Professor of Chemistry and Biochemistry at the University of California, Santa Cruz. His training included a B.S. in chemistry from the University of California, Los Angeles and a Ph.D. in organic chemistry from the University of California, Los Angeles. He engaged in postdoctoral research at Princeton University for a year, supported by a National Science Foundation Fellowship. His entire independent academic career has been at the University of California, Santa Cruz. Early in his term as an assistant professor, he began, without prior training, a program in marine natural products chemistry, which required a 10-year incubation to become successful. Research in the Crews laboratory emphasizes innovative approaches to the study of marine natural products

chemistry. During the last thirty years, his program has matured and is regarded, at an international level, as among the most active and productive in this subject area. The effectiveness of his efforts continues to be based on the foundation of multifaceted discoveries. The Crews group emphasizes a field-driven approach to explore and discover inspirational chemical structures often accompanied by significant biological activity derived from marine sponges. Several years ago, the laboratory expanded investigations to encompass the study of marine-derived fungi. Phil Crews is the principle investigator of a multi-institutional National Cooperative Drug Discovery Group, in collaboration with Novartis Institutes for Biomedical Research, researchers from the Center for Marine Biomedicine at the Scripps Institute of Oceanography, the Skaggs School of Pharmacy at UC San Diego, and Harbor Branch Oceanographic Institution in Florida. Important components of this research include field expeditions to regions of high biodiversity for the collection of sponges and deep-water sediments; bioassay-guided fractionation employing academic, medical, and corporate collaborations primarily for, but not limited to, anticancer drug discovery; state-of-the-art pure compound isolation and structure elucidation techniques; further explorations of chemical ecology, biosynthesis, and the relationship between secondary metabolite chemistry and taxonomy.



Yutaka Ebizuka graduated from the Faculty of Pharmaceutical Sciences, The University of Tokyo, in 1969 and received his PhD in 1974 from the same university. After two years postdoctoral experience in the Department of Chemistry and the Department of Botany at the University of British Columbia in Vancouver, Canada, he returned to his home university as an assistant professor in 1977. He has been professor of Natural Product Chemistry at the Graduate School of Pharmaceutical Sciences since 1995. His research interests are focused on the application of chemical, enzymological and molecular biological methodologies in the biosynthetic studies of natural products with pharmaceutical importance, especially of those from polyketide and terpenoid pathways. He has received several distinctions that

include the awards from the Japanese Society for Plant Cell and Molecular Biology (2001), Japanese Society of Pharmacognosy (2006) and the Pharmaceutical Society of Japan (2007). He served as Editor-in-Chief of *Chem. Pharm. Bull.* published by PSJ (2006–2009).



Lew Mander was born in Auckland, New Zealand, where he completed his BSc and MSc (hons.) degrees at the University of Auckland (the latter with R. C. Cambie). After moving to Australia, he obtained his Ph.D. in 1964 for his research on the structures of the Galbulimima alkaloids at the University of Sydney under the supervision of C. W. Shoppee, E. Ritchie, and W. C. Taylor. After 2 years of postdoctoral studies with R. E. Ireland, initially at the University of Michigan and then at the California Institute of Technology, he returned to Australia as a lecturer in organic chemistry at the University of Adelaide. He moved to the Australian National University in 1975 as a senior fellow in the Research School of Chemistry where he was subsequently appointed Professor in 1980, serving two periods as Dean

(1981–85; 1992–95) and recently made emeritus. He was a Nuffield Fellow at Cambridge University in 1972 with A. R. Battersby, and a Fulbright Senior Scholar at the California Institute of Technology in 1977 and at Harvard University in 1986 (with D. A. Evans on both occasions), an Eminent Scientist of RIKEN, Saitama, Japan (1995–96), and a Distinguished Alumnus Professor, University of Auckland (1992). Also, he has been a visiting professor at the universities of Sydney, Cambridge, Alberta, Colorado, and Canterbury (New Zealand). He is a Fellow of the Australian Academy of Science and The Royal Society (London). His research interests are concerned with the development of methods and strategies for the assembly and manipulation of complex natural products with a special interest in the role of gibberellins in plant growth and development.



Bradley S. Moore is currently Professor of Oceanography and Pharmaceutical Sciences at the Scripps Institution of Oceanography and the Skaggs School of Pharmacy and Pharmaceutical Sciences at the University of California, San Diego. He was first introduced to natural product research as a chemistry undergraduate student at the University of Hawaii where he explored the chemistry and biosynthesis of cyanobacterial natural products with the late Professor R. E. Moore. Fascinated by the beauty and complexity of natural product structures, he went on to conduct graduate (Ph.D. in 1994 in bioorganic chemistry with Professor H. G. Floss at the University of Washington) and postdoctoral research (1994–95 with Professor J. A. Robinson at the University of Zürich) on the biosynthesis of bacterial natural products in order to explore how nature assembles complex organic molecules. Prior to moving to the University of California at San Diego in 2005, he held academic appointments at the University of Washington (1996–99) and the University of Arizona (1999–2005). His research interests involve exploring and exploiting marine microbial genomes to discover new biosynthetic enzymes, secondary metabolic pathways, and natural products for drug discovery and development.



Kenji Mori was born in 1935. In all, he spent 42 years at the University of Tokyo. He received BSc (agricultural chemistry, 1957), MSc (biochemistry, 1959), and Ph.D. (organic chemistry, 1962) degrees. Later, he served as assistant professor (1962), associate professor (1968), and Professor of Organic Chemistry (1978–95) at the University of Tokyo. He is now Professor Emeritus. Dr. Mori worked for 7 years (1995–2001) as Professor at the Science University of Tokyo. At present, he is a research consultant at RIKEN (Institute of Physical and Chemical Research) and at Toyo Gosei Co., Ltd. His research interests are focused on the enantioselective synthesis of bioactive molecules such as pheromones and sphingolipids, biotransformations, and chemical ecology. He was awarded the Japan Academy Prize (1981), the Silver Medal of the International Society of Chemical Ecology (1996), the American Chemical Society's Ernest Guenther Award in the Chemistry of Natural Products (1999), the Special Prize of the Society of Synthetic Organic Chemistry, Japan (2003), and the Frantisek Sorm Memorial Medal of the Academy of Sciences of the Czech Republic (2003).



Craig A. Townsend is the Alsoph H. Corwin Professor of Chemistry, John Hopkins University, and holds joint appointments in the Departments of Biology and Biophysics. He received his BA with Honors in chemistry from Williams College and his Ph.D. in organic chemistry from Yale University, where he was an NIH Predoctoral Fellow and won the Richard L. Wolfgang Prize. He was then an International Exchange Postdoctoral Fellow of the Swiss National Science Foundation at the ETH in Zurich, and joined the faculty at Johns Hopkins in 1976. His research interests are in the areas of biosynthesis and chemistry of natural products; stereochemical and mechanistic studies of enzyme action; drug design; small molecule DNA interactions; enzymology and molecular biology of secondary metabolism; and the clinical applications of

fatty acid synthesis inhibition in the treatment of cancer, infectious diseases, and obesity. Professor Townsend has been a Research Fellow of the A. P. Sloan Foundation, a Camille and Henry Dreyfus Teacher-Scholar; he has received the Maryland Chemist of the Year award, an Arthur Cope Scholar Award from the American Chemical Society, and the Stuart Pharmaceuticals (now Astra/Zeneca) Award in Chemistry. He has served on NIH Study Sections as a regular and ad hoc member, and is on the Editorial Boards for *Chemistry & Biology* and *Bioorganic Chemistry*. He was cochair and cofounder of the Bioorganic Chemistry Gordon Conference and currently serves as an at-large member on the governing Council of the Gordon Research Conferences, and has served the Office of Technology Assessment, the American Chemical Society, and the National Institutes of Health.



John C. Vederas is University Professor of Chemistry at the University of Alberta and holds a Canada Research Chair in Bioorganic and Medicinal Chemistry. He obtained a BSc degree from Stanford University and a PhD degree with the late George Büchi from the Massachusetts Institute of Technology. His postdoctoral work at the University of Basel (with Christoph Tamm) and at Purdue University (with Heinz Floss) inspired a continuing interest in the application of organic chemistry to an understanding of biological mechanisms, especially in polyketide and peptide biosynthesis. He joined the University of Alberta as an assistant professor in 1977. He has received recognition for research and teaching from the University of Alberta, including the Rutherford Award for Excellence in

Undergraduate Teaching (1995), the University Cup for Research and Teaching (1998), the J. Gordin Kaplan Award for Excellence in Research (2003), the Killam Award for Excellence in Mentoring (2003), and the Klawe Prize in Teaching Large Classes (2006). He is an Alberta Centennial Medal recipient (2006), a Fellow of the Royal Society of Canada (1997) and a Fellow of The Royal Society (London, 2009). He has received the Merck Sharp Dohme Award (1986), the John Labatt Award (1991), the R. U. Lemieux Award (2002), and the Alfred Bader Award (2005) from the Canadian Society for Chemistry for his research. In 2008, he was awarded the Chemical Institute of Canada (CIC) Medal. He has also served in numerous scientific organizations, was President of the Canadian Society for Chemistry (2002–03), a member of Council of the Natural Sciences and Engineering Research Council of Canada (NSERC) (2001–04), and Chair of the 2008 Annual Conference of the Canadian Society for Chemistry. He is the author of over 235 research publications and 13 patents.



Rob Verpoorte holds a Pharmacists degree (1972) and a Ph.D. degree from Leiden University. His Ph.D. thesis was on pharmacologically active compounds from *Strychnos* species (1976). He began his career as a lecturer at Leiden University (1976-87) and became Professor and Head of the Department of Pharmacognosy in 1987. He has been a guest professor at the universities of London (UK), Uppsala (Sweden), Amiens (France), and Reims (France). From 1992 to 1998, he served as the Vice Chairman and Chairman of the committee of the Phytochemical Society of Europe. He is the author and coauthor of more than 600 scientific papers, 3 books, and 4 patent applications. He is Editor-in-Chief of the *Journal of Ethnopharmacology and Phytochemistry Reviews* and Executive Editor of *Biotechnology Letters*. He

serves on the editorial board of 21 journals. His research interests are in biosynthesis and metabolic engineering of plant secondary metabolism, metabolomics, medicinal plants, and the isolation and identification of biologically active natural products. He received an Honorary Doctorate from the University of Amiens, France in 2004 and in 2007, he received the Phytochemical Society of Europe Medal.



Peng George Wang obtained a BS in chemistry (1984) from Nankai University, China and a Ph.D. in organic chemistry (1990) from the University of California, Berkeley. He then conducted postdoctoral research at the Scripps Research Institute before becoming an assistant professor in 1994 at the University of Miami. From 1997 to 2003, he was a faculty member at Wayne State University. Since that time, he has served in the Departments of Biochemistry and Chemistry at The Ohio State University as Ohio Eminent Scholar in Macromolecular Structure and Function.

Research in the Wang laboratory is predominately focused on four areas of glycoscience. Glycochemistry: Work is centered on the generation of uncommon sugar libraries as well as the synthesis of key intermediates in carbohydrate-based biological processes that are essential for their study. Glycobiology: Biochemical characterization of carbohydrate active enzymes and investigations of the biological functions of carbohydrates in human diseases, immunity, and general microbiology are performed. Glycotechnology: Biosynthetic pathways are engineered for the synthesis of glycopharmaceuticals, polysaccharides for vaccine development, and biomedically important human glycoproteins. Glycoanalysis: Analysis of carbohydrate composition, sequence, structure, and interaction with proteins through MS, NMR, QCM, and other analytical methods.



Christian P. Whitman received his Ph.D. degree from the University of California, San Francisco in 1984 with Professor George L. Kenyon. At UCSF, he worked on the catalytic mechanism of mandelate racemase. This enzyme would later pique the interests of Professors John Gerlt, John Kozarich, Greg Petsko, and others, and expand our understanding of divergent evolution to include enzymes that catalyze different reactions but are derived from a common ancestor. He then worked as a postdoctoral fellow with Professor Kozarich at the University of Maryland in College Park, where he tackled mechanistic and evolutionary questions about the enzymes comprising the  $\beta$ -ketoadipate pathway. He was appointed as an assistant professor in the Division of Medicinal Chemistry, College of Pharmacy at the

University of Texas at Austin in 1987, and rose through the ranks to become Professor and Division Head in 1998. His research interests focus on the answers to two fundamental questions: how do enzymes work and how do they evolve?



Chi-Huey Wong received his BS and MS degrees from National Taiwan University, and Ph.D. (1982) in chemistry from Massachusetts Institute of Technology. He then worked at Harvard University as a postdoctoral fellow for another year. He started his independent career as assistant professor of chemistry at Texas A&M University in 1983 and became Professor in 1987. He was Professor and Ernest W. Hahn Chair in Chemistry at the Scripps Research Institute (1989–2006) and Director of the Genomics Research Center at Academia Sinica, Taipei (2003–06). Since October 2006, he has been President of Academia Sinica and Professor of Chemistry at the Scripps Research Institute and National Taiwan University.

Professor Wong is a recipient of The Presidential Young Investigator Award in Chemistry, the Roy Whistler Award of the International Carbohydrate Organization, the American Chemical Society Harrison Howe Award in Chemistry, the American Chemical Society Claude S. Hudson Award in Carbohydrate Chemistry, the International Enzyme Engineering Award, the Presidential Green Chemistry Challenge Award, The American Chemical Society Award for Creative Work in Synthetic Organic Chemistry, and the F. A. Cotton Medal. He is a member of the American Academy of Arts and Sciences and the US National Academy of Sciences.

His research interests are in the areas of bioorganic and synthetic chemistry and biocatalysis, including development of new methods for the synthesis of complex carbohydrates, glycoproteins, and small-molecule probes for the study of carbohydrate-mediated biological recognition, post-translational glycosylation, and drug discovery. He is the author and coauthor of over 600 publications and 60 patents.