Dr. Bruce E. Maryanoff
A Tribute

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This special issue of ARKIVOC is dedicated to Cynthia A. and Bruce E. Maryanoff to mark their distinguished careers in the pharmaceutical industry and their contributions to organic and medicinal chemistry.

Dr. Bruce E. Maryanoff was born on 26 February 1947 in Philadelphia, Pennsylvania. While growing up in Philadelphia, he established his first "laboratory" in the basement of his home at eight years of age. His chemistry education was formalized at Drexel University, where he earned a B.S. degree in chemistry (1969) and a Ph.D. degree in organic chemistry (1972; with Prof. Robert O. Hutchins). In 1971, he married Dr. Cynthia A. Maryanoff, an organic chemistry labmate. After postdoctoral studies for two years at Princeton University with Prof. Kurt M. Mislow, he joined McNeil Laboratories, Inc., a Johnson & Johnson subsidiary. He advanced on the scientific ladder in various Johnson & Johnson pharmaceutical units to the highest scientific position in the company. Presently, he is a Distinguished Research Fellow and a Team Leader in Johnson & Johnson Pharmaceutical Research & Development, Spring House, Pennsylvania.

Dr. Maryanoff has made numerous contributions to medicinal and organic chemistry. He is an internationally renowned expert in drug design and drug discovery. From 1976−1992, he

focused on central nervous system (CNS) therapeutics, with an emphasis on anticonvulsants and antidepressants. Dr. Maryanoff invented TOPAMAX® topiramate, a unique sugar sulfamate derivative, which is marketed worldwide for treating epilepsy and migraine headache, and achieved annual sales of more than $2 billion. Since 1991, he has pursued cardiovascular therapeutics, while also seeking drugs for treating pulmonary inflammatory diseases, metabolic disorders, and epilepsy. In the past 15 years, his drug research has dealt with structure-based drug design; peptides and peptidomimetics; inhibitors of diverse enzymes, especially serine proteases (thrombin, factor Xa, tryptase, cathepsin G, chymase) and kinases (protein kinase C-β, glycogen synthase kinase-3β); integrin (GPIIb/IIIa, αVβ3/5, α4β1/7) antagonists; and ligands for G-protein-coupled receptors (protease-activated receptors, urotensin-II receptor, vasopressin receptors, ADP receptor P2Y12). His efforts have led to 23 compounds entering preclinical development, 13 of which advanced into human clinical trials. In organic chemistry, he made seminal contributions to the understanding the stereochemistry and mechanism of the Wittig olefination reaction; adapted cobalt-mediated [2+2+2] alkyne cyclotrimerizations to the synthesis of macrocycles; and devised novel, self-assembling collagen-mimetic peptides. Dr. Maryanoff has published 265 scientific papers, is an inventor on 100 U.S. Patents (issued or pending), has presented 170 invited lectures, and has mentored 11 postdoctoral associates.

Throughout his tenure at Johnson & Johnson, Bruce has maintained a focus on developing his research group and postdoctoral scientists. His mentorship was less visible than that of a university professor, because his tutelage was performed inside the walls of a pharmaceutical company. However, his consistent application of scientific rigor and imagination produced an exceptionally mature ensemble of scientists, which provided the foundation for an impressive body of scientific accomplishment. He was a scientifically demanding mentor, yet supportive, resulting in a positive environment to grow. We became better scientists, communicators, and mentors through his leadership. He encouraged us to develop independent research programs and gave us great latitude in managing the day-to-day operations of our projects. When we encountered obstacles in the development of drug candidates, Bruce supported our efforts to build a stronger case for their recommendation. He knew from his own experience with TOPAMAX® that every path to a new drug meets resistance.

Bruce applies the same enthusiasm, perfectionism, and artistry to his personal pursuits, which include dining at the best restaurants of the world, cooking his own creations, enjoying fine wines, architectural design, gardening, flower arranging, and music.

Dr. Maryanoff has received two ACS national awards, a 2000 ACS Heroes of Chemistry Award and the 2003 ACS Award in Industrial Chemistry. The ACS Medicinal Chemistry Division inducted him into the Hall of Fame in 2008 and granted him the prestigious Edward E. Smissman Award in 2009. Dr. Maryanoff received a Philadelphia ACS Section Award (1984) and a Philadelphia Organic Chemists' Club Award (1995). He was honored with the Johnson Medal for Research and Development for discovery and development of TOPAMAX®, and was twice a recipient of Johnson & Johnson's Philip B. Hofmann Research Scientist Award. Dr. Maryanoff was recognized by Drexel University as a notable alumnus with several awards,

including election to the Drexel Alumni 100 Club. He was elected a Fellow of the American Association for the Advancement of Science (1989), a Fellow of the Royal Society of Chemistry (2000), and a Fellow of the ACS (2009; inaugural class).

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