



In Memoriam, P. Michael Conn, PhD (1949–2016)

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In Memoriam, P. Michael Conn, PhD (1949–2016)

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P. Michael Conn, PhD, 1949–2016.

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With the sudden passing of P. Michael Conn, the Endocrine Society lost one of the hardest-working scientists we have known. Michael was born in Oil City, Pennsylvania, received his BS from the University of Michigan, his MS from North Carolina State University, and his PhD from Baylor College of Medicine (working in Bert O'Malley's laboratory). Following a postdoctoral fellowship in the Dufau-Catt Laboratory at the National Institute of Child Health and Development, he joined the pharmacology department at Duke University, where his scientific career blossomed. In 1984, he assumed the chairmanship of pharmacology at the University of Iowa, where his flair for administration and scientific leadership first became apparent as he built powerful basic science programs in both pharmacology and reproductive

Abbreviations: GnRH, gonadotropin-releasing hormone; GPCR, G-protein-coupled receptors.

biology. He then moved to the Oregon Health Science Center as professor of physiology and pharmacology, associate director of the Primate Center and, ultimately, provost. There, he again oversaw a major scientific expansion during the presidency of Peter Kohler. At the time of his unexpected passing, Michael had begun leading a similar major science development effort as senior vice president for research and associate provost at Texas Tech University Health Sciences Center in Lubbock, where he remained an active professor of internal medicine and cell biology and biochemistry. His loving wife, Debby, survives him.

Of Michael's many wonderful gifts, the most incandescent was his intellect. To use a Boston phrase, he was "wicked smart." His remarkable intellectual gifts also had a rare dimension of creativity. He not only remained at the forefront of scientific thinking in our field but also was supported by continuous National Institutes of Health funding for his entire career, a remarkable feat given his heavy administrative burdens.

Michael's basic studies into the mechanisms of the action of gonadotropin-releasing hormone (GnRH) were the first to identify calcium as a key second messenger to GnRH's activation of its cognate receptor on the gonadotropin-producing cells of the anterior pituitary. His demonstration of the mechanisms of homologous receptor desensitization supported the development of a large number of GnRH analogs. His research program cleverly integrated disparate avenues of information to inform his work. These varied from ongoing studies of the physiology of GnRH in humans and primates, the peptide chemistry of GnRH analogs, and the cell biology of hormone action in G-protein-coupled receptors (GPCRs) for examining their pathways of degradation, to the use of genetic mutations in patients with isolated GnRH deficiency. He used each of these as they became available.

His work soon formed the basic science underpinnings that helped catalyze the development of GnRH analog treatments for many diseases, including prostate cancer and endometriosis. Michael's laboratory was also the first to demonstrate (1) internalization of GnRH receptor and the biological role that event supported, (2) GPCR receptor-receptor interactions within the plasma membrane, and (3) mutations in GnRH receptors that frequently misroute the intracellular processing of nascent GnRH proteins. He then demonstrated that this misrouting of mutants could be rescued by pharmacologic chaperones. This most recent demonstration, of intracellular misrouting of normal proteins by mutant GnRH receptor molecules, was extremely innovative in advancing our understanding of the intracellular trafficking of the GnRH receptor (and likely other rhodopsin-family receptors in other cell types and human diseases).

These fundamental insights are now having a major impact on drug development because they herald a potential new class of drugs based on regulation of receptor trafficking (*i.e.*, chaperone-based therapies). These agents may well have important implications for the diagnosis and therapy of many diseases of the GPCR family. With typical early insight, Michael appreciated the therapeutic opportunities that his studies suggested and obtained six enabling patents in this area. He also developed methods of high-throughput screening for selecting these new agents and went on to provide *in vivo* proof of their effectiveness in a mouse model of disease.

Michael published an astonishing 360 refereed publications and 239 chapters, the latter mostly in books for which he also served as editor-in-chief! His book *The Animal Research War* is a must-read for scientific proponents of ethical animal experimentation. This outstanding body of scientific contributions resulted in Michael's receipt of prestigious awards, including the Richard E. Weitzman and Oppenheimer Awards from the Endocrine Society, the John Jacob Abel Award in Pharmacology, and the International Aleman Prize, among numerous others.

Michael also served as president of the Endocrine Society and editor-in-chief of *Endocrinology* in addition to a large number of other journals in the field. He was a member of many important national and international boards of directors. His myriad publications in high-quality journals established him as a highly successful senior scientific leader.

Michael was also a wonderful human being. He greatly aided the career development of a cadre of emerging scientists throughout the Americas during his leadership of the Fogarty Program. He was tireless in his support of talented young trainees and good ideas and served as an extraordinary role model for rigor and integrity in science. These attributes made him a

tremendously powerful force within our field and resulted in his opinion being courted by nearly everyone who knew him. To know Michael was to understand his generosity and deep commitment to science and the scientific process.

Michael's great appetite for creativity outside of science was equally legendary. He was an amateur magician and had a propensity for languages, with fluency in French, Spanish, Japanese, and American Sign Language. These, along with his ham radio operator status, his financial and investment acuity, his investments in young, struggling artists early in their careers, and his portfolio of patents, give testimony to the multiple facets of the diamond that was Michael's personality.

Finally, Michael was always witty and fun to be with. He never failed to lighten the hearts of his colleagues. He was a true Renaissance man, a loyal friend, and kind and generous to all. His colleagues and trainees were always the richer for interactions with him, as it typically meant sharing good times and benefitting from helpful perspectives on life that left their recipients with a more optimistic view of things. These are remarkable, rare traits in anyone, and with Michael's passing they will be sorely missed by everyone who knew him.

P. Michael Conn's distinguished scientific contributions and broad research writings in reproductive biology, endocrinology, pharmacology, physiology, and molecular biology; his distinguished editorial and society service; his excellence in public advocacy for the research enterprise; and his excellent record in training and mentoring will serve as a permanent memorial to his remarkably rich life, which was so well-lived but cut all too short.

Acknowledgments

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