In Memory of Darrell R. Abernethy

On November 18, 2017 the discipline of pharmacology, the American Society for Pharmacology and Experimental Therapeutics (ASPET), and the International Union of Basic and Clinical Pharmacology (IUPHAR) suffered a significant loss with the death of Darrell Abernethy from pancreatic cancer. A Kansas native, Darrell was born in 1949 in Mitchell County and raised on the family farm near Scottsville, population 25, in the north-central portion of the state. He left home in 1967 to pursue an undergraduate degree in chemistry at the University of Kansas in Lawrence, and M.D. and Ph.D. (Pharmacology) degrees at the University of Kansas Medical School in Kansas City. His doctoral work, which focused on cholesterol biosynthesis, was performed under the guidance

of Daniel Azarnoff, M.D., a renowned clinical pharmacologist. Following internship and residency in Internal Medicine at the University of Miami, Darrell undertook postdoctoral training in Clinical Pharmacology with David Greenblatt, M.D. at Harvard Medical School. This launched a productive 36 year collaboration that resulted in over 100 published reports on drug metabolism and pharmacokinetics. He also trained in Geriatric Medicine at Boston University. Darrell held faculty appointments in Medicine and Clinical Pharmacology at Tufts University School of Medicine, Baylor College of Medicine, Brown University, and Georgetown University Medical Center, where he was the Francis Cabell Brown Professor of Medicine and Pharmacology and Director of the Division of Clinical Pharmacology. In 1999 he became Chief of the Laboratory of Clinical Investigation at the National Institute on Aging Gerontology Research Center. From 2007-2009 he was the Chief Science Officer of the United States Pharmacopeia, and from 2009 until his death the Associate Director for Drug Safety in the Office of Clinical Pharmacology at the Food and Drug Administration.

Darrell's research included both pharmacodynamic and pharmacokinetic studies, with particular emphasis on cardiovascular pharmacology. He had a special interest in the molecular mechanisms responsible for the therapeutic and toxic effects of cardiovascular agents, particularly in the aged. In recent years he was involved



The 2014 - 2018 IUPHAR Executive Committee in Xi'an, China May, 2015 *L* → *R*: (Standing) Masamitsu lino, David J. Webb, S.J. Enna, **Darrell R. Abernethy**, Michael Spedding, James E. Barrett, Bhagirath Patel, David LeCouteur, Graeme Henderson, Yong-Xiang Zhang (Seated) Francesca Levi-Scheffer, Petra Thürmann, Eeva Moilanen

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in defining the role of drug target polymorphisms in determining therapeutic responses and was a leader in the development of the Drug Burden Index for defining the effects of medications on functions that determine independence in the elderly. His highly cited work appears in over 300 published research articles, reviews and book chapters. Given his prominence in the field and administrative skills. Darrell was invited to serve on many local, national and international boards. Included were appointments to advisory committees for the National Institutes of Health, Food and Drug Administration, National Board of Medical Examiners, United States Pharmacopoeial Convention, American College of Physicians, Veterans Administration, Pharmaceutical Research Manufacturers Association Foundation, Burroughs Wellcome Foundation, and ASPET. He held elective office in professional societies, including the presidency of the American Society of Clinical Pharmacology and Therapeutics (ASCPT), and as chair of the American Board of Clinical Pharmacology, of the American Association for the Advancement of Science, and of the Clinical Division of IUPHAR. He was also a member of the IUPHAR Executive Committee. He was on the editorial boards of some of the leading journals in the field, such as

Clinical Pharmacology and Therapeutics, British Journal of Clinical Pharmacology, Journal of Clinical Psychopharmacology, and Clinical Pharmacology in Drug Development. In service to ASPET he was a member of the editorial board of Molecular Interventions, Associate Editor of the Journal of Pharmacology and Experimental Therapeutics, Editor-in-Chief of Pharmacological Reviews, and one of the two original Deputy Editors of *Pharmacology* Research and Perspectives. He was a Visiting Lecturer at nearly two dozen universities and was the recipient of numerous awards in recognition of his research and other contributions to the field. These included the Rawls-Palmer and the William B. Abrams awards from ASCPT and the Nathaniel T. Kwit Memorial Distinguished Service Award from the American College of Clinical Pharmacology.



At the podium during the Joint Scientific Meeting of Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists and the Molecular Pharmacology of G Protein Coupled Receptors in Melbourne, Austrlia in November, 2016

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In Memory of Darrell R. Abernethy



Panel discussion during the Symposium on Challenges in Drug Discovery & Development in Xi'an, China May, 2015 $L \rightarrow R$: Paul Vanhoutte, David J. Webb, **Darrell R. Abernethy**, Henry H. Sun

Darrell rapidly gained the respect and admiration of those who knew him. Although humble and selfeffacing, he would readily, and candidly, share his thoughts and advice when asked. His guidance was sought routinely. His opinions were always based on common sense, experience, and consideration for others.

Darrell said that although he left Mitchell County decades ago he remembered the lessons learned as a young farm hand in a remote area known for its frigid winters and blistering summers. These included an appreciation for the importance of hard work, self-reliance, personal responsibility, and initiative. These values, combined with his native intelligence and curiosity, propelled him into a world that differed considerably from that of his childhood. Taking full advantage of opportunities offered, Darrell contributed significantly to the basic understanding of drug actions, to education in the field, to the development of healthcare policy, and to the advancement of our discipline.

According to his wishes, Darrell's remains were buried beside his parents on the family farm. He returned home exactly 50 years after departing for college. The medical community is fortunate he chose to forsake the tranquility of country living for the challenges of a career in the biomedical sciences. He will be remembered by his friends for his laconic wit, keen insights, and sage counsel. His legacy is the legions of patients who benefit directly from his work.

S.J. Enna President, IUPHAR

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