KEITH REIMER, M.D.

1946-2002

Keith Arnold Reimer, M.D., Ph.D., Professor of Pathology at Duke University Medical School, internationally recognized cardiovascular scientist, pathologist, and teacher, died on March 15, 2002 of metastatic renal cell carcinoma at the age of 56. Keith began his career in experimental pathology studying ischemic injury of the kidney, however he quickly shifted his focus to myocardial ischemic injury, the field in which he went on to make his major scientific contributions. After completing the MD/PhD program at Northwestern University in Chicago, Keith joined the faculty at Duke University in 1975 as Assistant Professor of Pathology. Early in his career, working in collaboration with Dr. Robert B. Jennings, he published landmark studies describing and characterizing the "wavefront phenomenon" of myocardial ischemic cell death. These studies, published in two papers (Circulation 56: 786-794, 1977; and Laboratory Investigation 40: 633-644, 1979), have been cited more than 1000 times. During the early 1980s, Keith developed methods to measure baseline predictors of infarct size, such as area at risk and collateral flow, that have become the standard for generating reliable and reproducible data to test cardioprotective interventions. The effort to discover cardioprotective interventions led to one of Keith's most notable achievements – the description of one of the strongest and most reproducible interventions for reducing infarct size: ischemic preconditioning. Numerous investigators and laboratories have worked to better understand this remarkably effective intervention, and the ever-expanding number of studies on ischemic preconditioning, in a wide variety of tissues, have consistently confirmed the original observation that brief periods of ischemia and reperfusion are not detrimental, but are actually markedly protective. The original article describing the phenomenon of ischemic preconditioning, "Preconditioning with ischemia: a delay of lethal cell injury in ischemic myocardium" (Circulation 74: 1124-1136, 1986) has been cited more than 3700 times (the most cited paper in *Circulation*).

Keith was an active member of the ISHR since 1976, and was elected a Councilor of the American Section in 1979, serving until 1985. He was a finalist for the Richard Bing Young Investigator Award of the ISHR in 1980. Keith served as Secretary of the American Section from 1985-1994, and as a member of the Council of the International Society from 1989-1995. In 1997, he became President-Elect of the American Section and was the sitting President of the American Section, as well as a member of the International ISHR Council, when he died.

About the Award…

Each year, the International Council selects a speaker to deliver the Keith Reimer Distinguished Lecture at the World Congress or at the annual section meeting of one of the three largest ISHR Sections. The purpose of this lecture is to honor the memory of Dr. Reimer and to recognize his contributions to cardiovascular research. The topic of the lecture must be in the field of ischemia, coronary hemodynamics, cardiac metabolism, or contractile mechanisms. The speaker receives a plaque and $1,000 honorarium in addition to travel expenses.

This award is funded by a generous contribution from Chugai-Pharmaceutical Co.

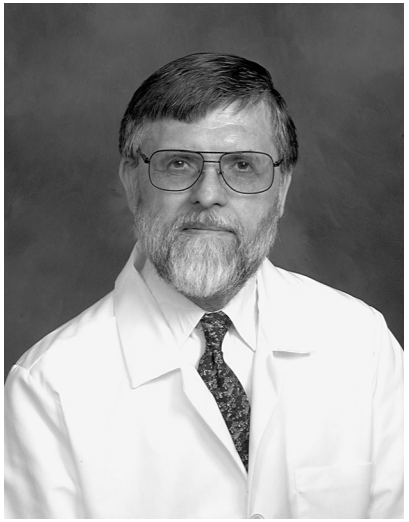
ISHR

International Society for Heart Research

ISHR

International Society for Heart Research

THE KEITH REIMER DISTINGUISHED LECTURE 2015



Keith Reimer, M.D. 1946-2002

Honored Speaker

Dr. Gerald Dorn

"Ancestry vs Ambiance:
The evolutionary underpinnings
of cardiac hypertrophy signaling "

2015 Honored Speaker

Gerald W Dorn II, M.D. Seattle, WA

Gerald W Dorn II is the Philip and Sima K Needleman Professor at the Washington University in St. Louis School of Medicine. He received his medical school, Internal Medicine, and interventional Cardiology training at the Medical University of South Carolina in Charleston, SC, where he was introduced to G-protein receptor signaling as a fellow in Pharmacology in the laboratory of Perry Halushka, MD, PhD. After a brief stint on the faculty at the University of Texas Health Science Center in San Antonio, Gerald moved to the University of Cincinnati where he rose through the ranks to become Chief of the Division of Cardiology and Associate Dean for Cardiovascular Services. During this period, Gerald's interest in G-protein coupled neurohormonal signaling pathways bore early fruit as a series of genetic mouse models in which cardiac-specific manipulation of Gαq or its downstream effectors activated intrinsic genetic programs for cardiomyocyte growth and/or programmed death. Gerald moved to Washington University in St. Louis in 2008 to become the inaugural Philip and Sima K Needleman Professor and Associate Chair (Internal Medicine) for Translational Research. He is also the founding Director of the Washington University Center for Pharmacogenomics. When not directing his laboratory, writing papers, or mentoring young investigators, Gerald is likely to be engaged in peer review, as a member of National Institutes of Health or American Heart Association study sections, an editorial board member for *Circulation* and *Physiological Reviews*, as Consulting Editor for *Circulation Research*, or as a member of the Board of Reviewing Editors for *Science*. Gerald has been elected to Alpha Omega Alpha, the American Society for Clinical Investigation, and the Association of American Physicians. Among the Distinguished Lectures that he has given are the Gordon Wilson Lecture at the 2006 American Clinical and Climatological Association meeting and the Thomas W. Smith memorial lecture at the 2011 Scientific Sessions of the American Heart Association. In 2014 Gerald received the Distinguished Scientist Award from the American Heart Association.

The longstanding goal of the Dorn laboratory has been to define stress signaling pathways orchestrating the transition from normal myocardium to cardiomyopathy; the current emphasis on neurohormonal signaling events that contribute to development of cardiac hypertrophy and its progression to heart failure reflects this focus. The Dorn group uses integrated cell and molecular biology platforms complemented by genetically and physiologically manipulated mouse models to address mechanistic questions relating to cardiomyocyte signaling in pathological cardiac hypertrophy, and especially the transition of compensated hypertrophy to dilated cardiomyopathy/heart failure. A vibrant human genomics program employs new approaches for high throughput analysis of large cardiac cohorts and next generation sequencing technology to bridge the bench and bedside. A scientifically and culturally diverse group of students, postdoctoral fellows, and research associates is known for scientific creativity and multidisciplinary collaborations.

Dr. Dorn's early investigations helped establish that autocrine/paracrine signaling through Gq is sufficient both to induce the genetic program for pathological hypertrophy, and to cause heart failure by inducing cardiomyocyte apoptosis. Gerald's body of research dissecting mitochondrial mechanisms of heart disease is particularly noteworthy for its scientific rigor, conceptual and technical innovation, and investigative impact: Gerald and colleagues identified Gq-mediated transcriptional upregulation of the mitochondrial death protein Nix/Bcl-xL as the major factor driving cardiomyocyte apoptosis in hypertrophy, and upregulation of the related Bcl2 family protein, Bnip3, as a central contributor to apoptotic infarct extension after cardiac ischemia. He subsequently determined that these Bcl2 factors are re-targeted to cardiac sarcoplasmic reticulum in heart disease where they control calcium crosstalk between SR and mitochondria that evokes programmed cardiomyocyte necrosis. Recognizing that mitofusin proteins are integral to this form of inter-organelle communication, the Dorn laboratory recently uncovered roles for these and other mitochondrial dynamics factors in homeostatic mitochondrial quality control and cardiomyocyte differentiation during embryonic development. Their ongoing work in this area is prompting the development of new paradigms relating mitochondrial dynamism to non-canonical mitochondrial functioning in cardiac health and disease.

Dr. Dorn's background as a cardiologist has informed much of this research. He was involved in the development and early application of sophisticated physiological clinical diagnostics to interrogate complex cardiovascular phenotypes in mice, and more recently *Drosophila*. As Principal Investigator of NHLBI P50 SCOR and SCCOR programs at the University of Cincinnati, Gerald worked with his co-investigators to model human DNA polymorphisms and mutations in experimental murine systems in order to reveal underlying mechanisms. Genetic/genomic studies performed in the Dorn laboratory have elucidated both common and rare DNA variants that modify clinical heart failure risk, and revealed the consequences of regulated small and large non-coding RNA expression in developing and failing hearts. Identifying novel and rare hereditary factors that cause or contribute to heart disease continues to be a focus.

Gerald and his wife of 25 years, Dr. Deborah A. Hauger (also a cardiologist) have one daughter, Lisa, who will be graduated from Washington University in St. Louis in May, 2015 with a double major in Biology and Classics and in June will be matriculating in the MSTP program at Ohio State University.

Previous Award Winners…

Fabio Di Lisa, MD: 2014
Karin Sipido, MD, PhD: 2013
Metin Avkiran, DSc, PhD: 2012
Charles Murry, MD, PhD: 2011
Richard Moss, PhD: 2010
Elizabeth Murphy, PhD : 2009
David Eisner, PhD: 2008
Eduardo Marbán, MD: 2007
Garrett Gross, PhD: 2006
Masao Endoh, MD, PhD: 2005
R. John Solaro, PhD: 2004
Gerd Heusch, MD, PhD: 2003
Roberto Bolli, MD: 2002