

## 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 1700 times.

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.*



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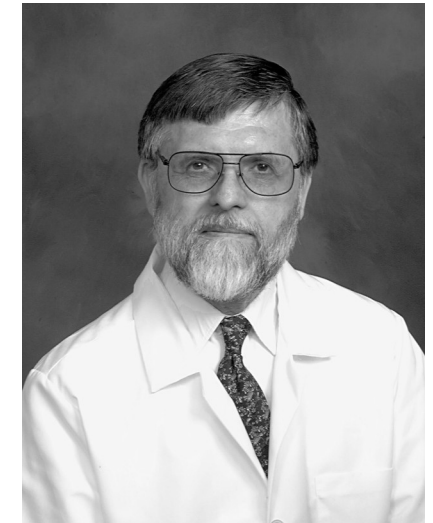
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## THE KEITH REIMER DISTINGUISHED LECTURE 2009



Honored Speaker

**Dr. Elizabeth Murphy**

“The role of SNO (S-nitrosylation)  
in cardioprotection”

# ELIZABETH MURPHY

2009 HONORED SPEAKER  
SAPPORO, JAPAN



Dr. Elizabeth Murphy is Head of the Cardiac Physiology Section in the Translational Medicine Branch at the National Heart, Lung and Blood Institute. She received her PhD from the University of Pennsylvania in Biochemistry in 1980, followed by postdoctoral studies in Physiology at Duke University. In 1984, Dr. Murphy was appointed a Research Assistant Professor in the Department of Physiology at Duke University. In October, 1984, she joined the National Institute of Environmental Health Sciences, National Institutes of Health as a Staff Scientist. She was tenured in 1990, and continued at the National Institute of Environmental Health Sciences as Head of the Cell Biology Section in the Laboratory of Signal Transduction until she moved to the National Heart, Lung, and Blood Institute in 2006.

Dr. Murphy received the Richard Bing Young Investigator Award in 1983. She is an Associate

Editor for the *Journal of Molecular and Cellular Cardiology*, Senior Guest Editor for *Circulation* and Consulting Editor for *Circulation Research*. She also serves on the editorial board of the *American Journal of Physiology*. She is a Fellow of both the ISHR and the AHA. She served as a member of the Electrical Signaling, Transport and Arrhythmias NIH Study Section from 2004-2008, and as a member of Cardiovascular A Study Section from 1994-1998. She has served on a number of American Heart Association committees including the National Research Committee (2000-2005), and as a member of the Leadership Committee of the Basic Cardiovascular Science Council (2000-2004; 2006-2008). Dr. Murphy served as Secretary of the American Section of the International Society of Heart Research from 2003-2009. She is currently President-Elect of the American Section of the International Society for Heart Research and a member of the International Council of the International Society for Heart Research.

Dr. Murphy's research is focused on ionic and energetic alterations in cell death and cardioprotection, and the signaling pathways that control these events. She has co-authored more than 150 papers. Work by her and her collaborators showed that the cardioprotective effect of the sodium-proton exchange inhibitors, such as amiloride, involved attenuating the rise in sodium and calcium during ischemia and reperfusion. Her lab further demonstrated that stress induced protection, termed pre-

conditioning, also reduces the rise in  $\text{Na}^+$  and  $\text{Ca}^{2+}$  during ischemia. Over the years, her lab has published a number of critical studies examining the role of ion channel transporters such as the sodium proton and sodium-calcium exchangers in ischemia and reperfusion injury. Dr. Murphy has also made important contributions in the development of calcium and magnesium indicators and holds a patent for a fluorescent calcium indicator. Her recent work has focused on the role of mitochondria in cell death and cardioprotection.

## *Previous Award Winners...*

**David Eisner**

(Athens, Greece: 2008)

**Eduardo Marbán**

(Bologna, Italy: 2007)

**Garrett Gross, PhD**

(Toronto, Canada: 2006)

**Masao Endoh, MD, PhD**

(Osaka, Japan: 2005)

**R. John Solaro, PhD**

(Brisbane, Australia: 2004)

**Gerd Heusch, MD, PhD**

(Strasbourg, France: 2003)

**Roberto Bolli, MD**

(Madison, Wisconsin: 2002)