

## 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 speaker's section meeting. 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  
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## THE KEITH REIMER DISTINGUISHED LECTURE 2005



Honored Speaker

**Dr. Masao Endoh**

“Regulatory mechanisms of Ca<sup>2+</sup>  
signaling in intact myocardial cells”

# MASAO ENDOH, M.D., PH.D.

2005 HONORED SPEAKER

OSAKA, JAPAN



Dr Endoh graduated with an MD from Tohoku University School of Medicine in Japan in 1966 and received postgraduate training at the same institution.

His postgraduate training was initially in surgery, but Dr Endoh's interest was soon drawn to cardiovascular pharmacology and his research effort has focused on this area since that time. Dr Endoh worked as a visiting scientist at the Sandoz Pharmaceutical Research Institute in Basel, Switzerland (1972-73) and at the Institute of Pharmacology, University of Essen, Germany (1973-75), before returning to Tohoku University School of Medicine, as an Associate Professor, in 1975. He remained at Tohoku (including a sabbatical at the Mayo Foundation, Rochester, Minnesota, USA, in 1983-84) until his move to Yamagata in 1985. His position since September 1, 2005 is vice president of Yamagata University.

Dr Endoh has made key contributions to the understanding of the mechanisms that regulate cardiac contractile function, particularly in response to neurohormonal fac-

tors and pharmacological agents. In the course of his productive research career, Dr Endoh has developed and applied several innovative techniques to address specific questions. He developed a blood-perfused canine papillary muscle model, which allowed a detailed analysis of the force-frequency relationship, assessment of the effects of novel inotropic agents, and study of the autonomic control of cardiac contractility. Dr Endoh's work has helped delineate the mechanisms underlying receptor-mediated regulation of myofilament calcium sensitivity, particularly in response to  $\alpha_1$ -adrenoceptor stimulation, and the mechanisms of action of calcium sensitising drugs. He was one of the first to use the bioluminescent protein aequorin to monitor intracellular calcium in intact cardiac muscle, in order to study the roles of receptor-mediated mechanisms in the regulation of calcium mobilisation during excitation-contraction coupling. Dr Endoh was also one of the first to describe the inhibitory effects of pertussis toxin, then known as islet-activating protein, on myocardial responses to adenosine and muscarinic receptor stimulation. His more recent work has revealed novel cross-talk mechanisms in the regulation of cardiac contractile function,

such as that between endothelin-1 and norepinephrine, and has explored the underlying signalling mechanisms, focusing on the roles of protein kinases and phosphatases.

Dr Endoh has published more than 220 papers, including over 175 original articles. He has served or continues to serve on the Editorial Boards of numerous national and international journals, including the Journal of Cardiovascular Pharmacology, American Journal of Physiology, Circulation Research and Journal of Molecular and Cellular Cardiology. In addition to being an active member of many professional organizations, Dr. Endoh is a Founding Fellow of the ISHR and a Fellow of the American Heart Association.

## *Past Award Winners.....*

**R. John Solaro, PhD**

(Brisbane, Australia: 2004)

**Gerd Heusch, MD, PhD**

(Strasbourg, France: 2003)

**Roberto Bolli, MD**

(Madison, WI: 2002)