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 Chugai-Pharmaceutical Co.

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THE KEITH REIMER DISTINGUISHED LECTURE 2003

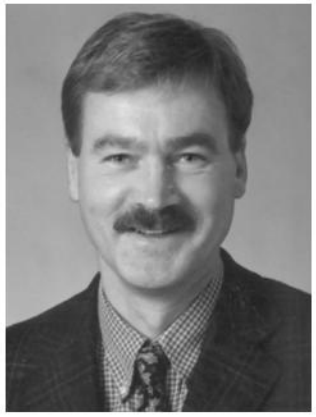
Honored Speaker

Dr. Gerd Heusch

"Coronary Microembolization"

2003 Honored Speaker

Gerd Heusch, M.D., Ph.D. Strasbourg, France



Gerd Heusch was born on May 20, 1955 in Bonn. He graduated with an M.D. from the University of Bonn in 1980, and with a Ph.D. from the University of Düsseldorf in 1985. From 1985-6. he received a fellowship from the German Research Foundation to serve as research cardiologist in the Division of Cardiology at the University of California, San Diego under the supervision of Dr. John Ross Jr. As a Heisenberg scholar of the German Research Foundation from 1987-9, he studied in the Department of Physiology and received clinical training in the Department of Cardiology at the University of Düsseldorf under the supervision of Professor Franz Loogen. Since 1989, Dr. Heusch has been Professor and Chairman of Pathophysiology at the University of Essen Medical School. From 1999-2000, Dr. Heusch was a Visiting Professor in the Department of Physiology, University of South Alabama, where he is now an Adjunct Professor.

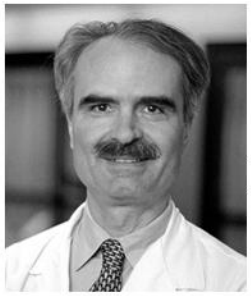
Dr. Heusch's research has focused on the areas of α-adrenergic coronary vasoconstriction and myocardial hibernation/ischemic preconditioning. In 1983, Dr. Heusch was the first to identify α-adrenergic coronary vasoconstriction distal to coronary stenosis and the resultant myocardial ischemia in anesthetized dogs during cardiac sympathetic nerve stimulation. Subsequently, he characterized the responsible α_2-adrenoceptor subtype and a feed-back cycle between sympathetic activation and myocardial ischemia. He extended his findings with anesthetized dogs during electrical sympathetic nerve stimulation to conscious dogs during treadmill exercise, and finally and more recently, to patients with chronic stable angina and patients undergoing PTCA and stent implantation. Recently, he identified a genetic background (splice variant of G protein ß-subunit) for enhanced α-adrenergic coronary vasoconstriction in patients. This work is an example of pioneering experimental observations that were subsequently and successfully transferred to the clinical arena.

Stimulated by his experience with Dr. John Ross in San Diego, Dr. Heusch developed a pig model of perfusion-contraction matching and short-term myocardial hibernation. Subsequently, he characterized the limits of such short-term hibernation in terms of blood flow, inotropic state and duration. He then studied the underlying mechanisms of short-term hibernation using ischemic preconditioning as a reference, and found an important role for adenosine and K_{ATP} –channel activation in his pig model of ischemic preconditioning but not in short-term hibernation, thus distinguishing these two phenomena mechanistically. Dr. Heusch characterized the reduction of calcium responsiveness and the role of endogenous NO in short-term hibernation. His seminal article in Physiological Reviews is the most complete and critical article on myocardial hibernation. Most recently, Dr. Heusch has focused on the pathophysiology of coronary microembolization and its inflammatory consequences in the coronary microcirculation and its surrounding myocardium, both in experimental and clinical studies.

Dr. Heusch has published 250 papers, including 150 original articles in peer-reviewed journals. He received the Edens award of the Heinrich Heine-University Düsseldorf (1985), the Vater award of the Johannes Gutenberg-University Mainz (1997), the Acker award of the German Cardiac Society (1998) and the Silver Medal as the Basic Science Lecturer of the European Society of Cardiology (2002). In 2000, he was awarded an honors doctorate by the Medical Academy Nishnij Nowgorod. Dr. Heusch is Editor of Basic Research in Cardiology, and has served on the Editorial board of numerous prestigious journals. He is a Fellow of the Council of Basic Cardiovascular Sciences of the AHA, the American College of Cardiology, the Cardiovascular Section of the American Physiological Society, the European Society of Cardiology and the ISHR. In addition, Dr. Heusch has served on the board of the German Cardiac Society (1995-1999), as Chairman of the Working Group on Myocardial Function of the European Society of Cardiology (1998-2000), and on the Council of the International Society for Heart Research (1995-present). He is currently President of the European Section of the ISHR.

2002 Honored Speaker

Roberto Bolli, M.D. Madison, Wisconsin



Dr. Bolli graduated from the University of Perugia (Italy) in 1976. After a research Fellowship at the NIH (1978-1980) and a clinical Fellowship in Cardiology at Baylor College of Medicine (1981-1983), he was appointed to the faculty at Baylor, where he rose to the rank of Professor. In 1994, he accepted the position of Chief of Cardiology at the University of Louisville. Twice at two different institutions, Dr. Bolli developed a leading research program that did not previously exist.

For the past 25 years, Dr. Bolli's research has consistently focused on myocardial ischemia. He has carried out careful, innovative studies that have enhanced our understanding of the mechanisms responsible for injury during ischemia and reperfusion and have provided a framework for developing cardioprotective strategies. Perhaps the most notable aspect of his research is that he has introduced a number of new hypotheses that have stood the test of time and are now widely accepted. His earlier work at Baylor established a fundamental role of reactive oxygen species in the pathogenesis of reversible postischemic dysfunction or myocardial "stunning". In a series of studies spanning a decade, he proposed, tested, and validated the concept that myocardial stunning is a manifestation of oxygen radical-mediated reperfusion injury, a concept that is now regarded as a proven hypothesis. More recently, he has identified, for the first time, the signal transduction pathways and the cardioprotective genes responsible for the late phase of preconditioning, thereby elucidating the molecular basis of this adaptation of the heart to stress. His discovery that the cardioprotection afforded by preconditioning is mediated by two proteins commonly thought to be detrimental (inducible NO synthase and cyclooxygenase-2) has impelled a reassessment of current paradigms regarding these enzymes and has paved the way for developing novel pharmacologic or genetic therapeutic approaches in patients with coronary artery disease. He has also performed translational research in which he has applied basic insights to the study of preconditioning in man. His discovery that nitroglycerin induces a late preconditioning effect in patients has revealed a new therapeutic property of nitrates.

Dr. Bolli is the recipient of an NIH MERIT Award (2001-2010) and the Basic Research Prize of the American Heart Association (2001). He is a member of the American Society for Clinical Investigation and the Association of American Physicians. Dr. Bolli received the Physician-Scientist Award of the American College of Chest Physicians (1987-89) and the Young Investigator Award for Free Radical Research (1988). He is past member of the Research Committee (1998-2000) of the AHA, past Chairman of the Cardiovascular Pathophysiology 1 Review Committee (1998-2000) of the AHA, and incoming Chairman of the Council on Basic Cardiovascular Sciences (2003-2005). He is presently a member of the NHLBI Program Project Review Committee (2000-2004), Secretary General and Treasurer of the ISHR (1998-2004), and Associate Editor of Circulation Research and of the Journal of Molecular and Cellular Cardiology.

Dr. Bolli has published 210 papers, including 150 original articles. Among the original articles, 26 have appeared in Circulation Research, 5 in PNAS, 7 in JCI, and 14 in Circulation. Twenty-one of his papers have been cited more than 100 times and five more than 300 times. He is first or last author in 68% of the 150 original articles.