

Janice M. Pfeffer, Ph.D.

1943-2001

The Janice M. Pfeffer Lectureship recognizes the scientific contributions of one of the pioneers in the field of cardiac remodeling. Born in Rockford, Illinois on October 31, 1943, Janice Marie Sikorski graduated with honors from Rockford College. There she studied with a lab partner named Marc Pfeffer, who shared her passion for integrative physiology. Janice and Marc became inseparable not only as husband and wife, but also as collaborators in integrative physiology. Janice M. Pfeffer was awarded her Ph.D. in Physiology and Biophysics from the University of Oklahoma, where she studied under Dr. Edward D. Frohlich. Her doctoral thesis, "Longitudinal Changes in Cardiac Function and Geometry During the Development of Left Ventricular Hypertrophy in the Spontaneously Hypertensive Rat," became a classic study on the role of cardiac hypertrophy and left ventricular remodeling. She continued her studies as a post-doctoral fellow in Dr. Eugene Braunwald's laboratory at the Peter Bent Brigham Hospital, Harvard Medical School. There she demonstrated that progressive ventricular enlargement, "ventricular remodeling", occurs following a myocardial infarction, and that this process continues long after the histologic resolution within the infarct zone. Her landmark study, "Influence of Chronic Captopril Therapy on the Infarcted Left Ventricle of the Rat", definitively demonstrated that ventricular enlargement was attenuated by angiotensin converting enzyme inhibitors, and that favorable alterations in ventricular remodeling in the animal model were associated with improved cardiac performance and prolonged survival. These pioneering animal studies introduced the concept of ventricular remodeling as a potential therapeutic target, and subsequently served as the basis for the landmark clinical trial, Survival and Ventricular Enlargement (SAVE), which showed that long-term treatment with an angiotensin converting enzyme inhibitor (captopril) prevented cardiac remodeling and resulted in improved clinical outcomes in humans. Based upon the results of this seminal translational study, angiotensin converting enzyme inhibitors have become one of the mainstays of therapy for the treatment of myocardial infarction.

In addition to being a meticulous and thoughtful scientist, Janice M. Pfeffer was a devoted mother and wife, who serves as a role model for countless women scientists. The intent of the Janice M. Pfeffer Lectureship is to acknowledge not only the latest insights and advances in the field of cardiac remodeling, but also to remember the remarkable personal and professional qualities that were emblematic of Dr. Janice M. Pfeffer.

About the Award...

Each year, the International Council selects a speaker to deliver the Pfeffer 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. Pfeffer and to recognize her contributions to cardiovascular research. The topic of the lecture must be in the field of remodeling, heart failure and/or hypertrophy. The speaker receives a plaque and \$1,000. honorarium in addition to travel expenses.



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ISHR

International Society for Heart Research

The Janice Pfeffer Distinguished Lecture 2008



Honored Speaker

Howard Rockman, M.D.

"G Protein-Coupled Receptor Signaling and Heart Disease"

Howard Rockman, M.D.

2008 Honored Speaker

Cincinnati, Ohio



Dr. Rockman is the Edward S. Orgain Professor of Medicine at Duke University. Dr. Rockman received his MD from McGill University in 1983. He then completed medical residency at the Montreal General Hospital in 1987 and in 1991, Cardiology Fellowship at the University of California, San Diego. Cur-

rently, Dr. Rockman is the Chief of Cardiology and has joint appointments in the Departments of Cell Biology and Molecular Genetics.

His research interests focus on understanding the molecular mechanisms of cardiac hypertrophy and heart failure, with emphasis on the role of G protein-coupled receptors in the development of disease. Throughout Dr. Rockman's research career, he has shown a pattern of innovation and creativity. In the late 1980's, he pioneered the use of the mouse as a model system to study the molecular underpinnings of cardiac hypertrophy. This seminal work allowed investigators to tap into the emerging area of genetic engineering in the mouse to understand the molecular basis for cardiac hypertrophy. In a landmark study, he disproved a long-standing theory that normalization of wall stress was critical in preventing heart failure. His work has resulted in a paradigm

shift in our current understanding of how the heart responds to pathological stresses. Dr. Rockman's creativity is perhaps best represented by his novel work on the role of phosphoinositide 3-kinase (PI3K) in G protein-coupled receptor (GPCR) internalization. He made the novel discovery that the lipid kinase PI3K also has protein kinase activity, and identified for the first time an endogenous substrate for the enzyme. Dr. Rockman's innovation in research is perhaps best exemplified by his work in *Drosophila* where he developed and applied high throughput imaging of the heart in awake adult *Drosophila* to identify novel candidate genes that cause cardiomyopathy in humans.

His recent work in understanding the role of GPCR signaling in the pathogenesis of the failing heart led to the discovery of a new signaling mechanism, which is independent of G protein activation, but uses β -arrestins to mediate β 1AR signaling to the epidermal growth factor receptor. This discovery is leading to the development of novel drugs that not only act as classical antagonists for G protein signaling, but also stimulate β -arrestin-mediated cytoprotective signaling.

Dr. Rockman has been recognized for his passion in mentoring young scientists by receiving the 2005 Outstanding Mentorship Award from the fellowship program at Duke University. He has trained over 45 scientists, two of which have been the recipient of the Louis N. and Arnold M. Katz Basic Science Research Prize from the AHA. He has authored over 150 journal articles, and has been elected to the Association of American Physicians and the American Society for Clinical Investigation.

Previous Award Winners...

Joanne S. Ingwall, Ph.D.

Bologna, Italy: 2007

"Energetics of the Failing Heart:
new tools yield new insights"



Evangelia Kranias, Ph.D.

Toronto, Canada: 2006

"The Orchestra of SR Calcium Players:
Who is the Conductor?"



Edward D. Frohlich, M.D.

New Orleans, LA: 2005

"Left Ventricular Hypertrophy:
An Adaptive Cardiac Response with
Multifactorial Risks"



David Kass, M.D.

Brisbane, Australia: 2004

"Cardiac Dysynchrony and
Resynchronization: From Bench to
Bedside"



Piero Anversa, M.D.

Mystic, Connecticut: 2003

"Myocardial Regeneration in
Heart Failure"

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