

## Peter Harris, M.D., Ph.D. 1923 - 2002

Peter Harris was an influential international statesman in cardiology. A science scholar at King's College, London, UK, Harris trained in medicine at Kings College Hosp., qualifying in 1946. During house appointments at King's and the Brompton Hosp., he obtained his MD in 1951, winning the university gold medal and a PhD in 1955. He was appointed lecturer, in 1957, and reader in medicine, in 1962, at Birmingham University. In 1966, he was appointed the first Simon Marks' Professor of Cardiology at the Cardiothoracic Institute and Director of the Institute of Cardiology, in the Univ. of London.

His career, which was dedicated to exploring the cardiovascular system and the origins of heart disease, can be viewed as three chapters. During the 1950's and early 1960's, he was in the mainstream of research, and used established methods of haemodynamic measurements to explore cardiac output and pulmonary blood flow and the metabolism of the heart muscle. [During]...the second stage of his career ...his research into the heart muscle turned to experiments at the cellular and molecular level. In 1970, Harris organized a meeting of ...an international study group for research in cardiac metabolism, which resulted in the publication of one of the most influential works on cardiology: *Calcium and the Heart*. The third element to Harris's career involved his fascination with the evolution of the cardiovascular and related systems. In a series of essays in 1983, he traced the way that the origins of clinical heart failure might lie in ancient reflexes. His study of the right ventricle of the heart and the blood flow to the lungs of yaks showed they had adapted genetically to high altitude by eliminating the vasoconstrictor response due to reduction of oxygen.

Away from the laboratory, he was a talented musician and artist, and he showed a leaning toward satirical writing. His wife Francesca survives him.

*Excerpted from* The Lancet 2003: 361: 1231.

### About the Award...

Created in 1986, this very distinguished Award of international importance is the highlight of each World Congress of the ISHR. It is conferred in recognition of a lifetime of distinguished scientific achievements in the field of cardiovascular research.



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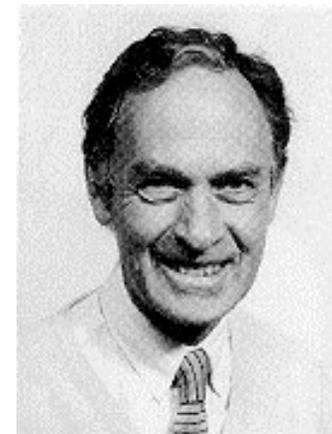
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## ISHR

International Society for Heart Research

## The Peter Harris Distinguished Scientist Award 2017



Peter Harris, M.D., Ph.D.  
1923-2002

### Award Winner

## David Eisner, D.Phil.

“Ups and Downs of Calcium  
in the Heart”

## David Eisner, D.Phil.

## 2017 Award Winner Hamburg, Germany



David Eisner has been at The University of Manchester since 1999 and has held the British Heart Foundation Chair of Cardiac Physiology since 2000. His undergraduate degree was obtained at the University of Cambridge,

and he did graduate work at Oxford with Denis Noble, graduating in 1979. He was on the Faculty at University College London (1980-90) and the University of Liverpool (1990-1999) before moving to Manchester.

Dr Eisner's research has focused on the basic mechanisms regulating intracellular sodium and calcium concentrations. He demonstrated the steep dependence of contraction on intracellular sodium concentration and thence the role of sodium calcium exchange (NCX) in linking Na regulation to contraction. After developing a method to measure the Ca content of the sarcoplasmic reticulum (SR), he characterized the mechanisms responsible for the normal, stable control of SR Ca

content. This process, termed "autoregulation" results from the fact that changes in the amplitude of the systolic Ca transient modulate fluxes of calcium across the sarcolemma. This mechanism explains many, previously perplexing, aspects of calcium regulation including the fact that changes in the properties of the SR Ca release channel (Ryanodine Receptor) have no effect in the steady state on the amplitude of the calcium transient due to changes of SR Ca content. Instabilities in this regulation may be responsible for disorders such as *pulsus alternans*. Most generally, it emphasises that the cell is in calcium flux balance where calcium influx and efflux must be equal, and this has to be taken into consideration when analysing calcium fluxes. He has studied the mechanisms responsible for the generation of arrhythmic Ca waves in the heart and shown that these occur when a threshold level of SR Ca content is exceeded. These waves can be abolished by drugs such as local anaesthetics which decrease RyR opening, a finding which has been developed to therapeutic effect by others. In subsequent work he investigated how a combination of RyR leak and maintained SR Ca content can result in Ca waves and arrhythmias in inherited arrhythmia conditions. His recent work has concentrated on the regulation of *diastolic* calcium suggesting that many of the changes of diastolic calcium can also be related to the need for the cell to maintain flux balance.

Dr Eisner has been awarded a Wellcome Trust Senior Lectureship, The Wellcome Trust Physiology Prize and the GL Brown Lecture of The Physiological Society as well as the Keith Reimer Lecture of the ISHR, the Car-

meliet-Coraboeuf-Weidmann Lecture of the Working Group in Cardiac Cellular Electrophysiology of the European Society of Cardiology, the Bohuslav Ostadal Lecture of the International Academy of Cardiovascular Sciences, and the Annual Review Lecture of The Physiological Society.

His contributions to professional service include serving as Chairman of the Editorial Board of *The Journal of Physiology* and as Editor-in-Chief of *The Journal of Molecular and Cellular Cardiology*. He is currently Past-President of the European Section of the ISHR as well as the President of The Physiological Society.

### Past Award Winners

Donald M Bers, USA, 2016  
Roberto Bolli, USA, 2015  
Jonathan Lederer, USA, 2015  
Evangelia Kranias, USA, 2014  
Masatsugu Hori, Japan, 2013  
James M. Downey, USA, 2010  
David J. Hearse, UK, 2007  
Arnold M. Katz, USA, 2004  
Robert J. Lefkowitz, USA, 2001  
Lionel H. Opie, South Africa, 1998  
Howard E. Morgan, USA, 1995  
Robert B. Jennings, USA, 1992  
Albrecht Fleckenstein, Germ, 1989  
Setsuro Ebashi, Japan, 1986