

## 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.

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### 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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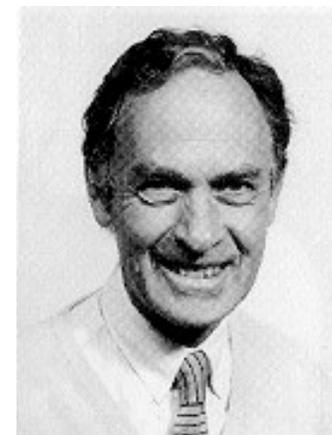
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## ISHR

International Society for Heart Research

## The Peter Harris Distinguished Scientist Award 2007



Award Winner

### David J. Hearse, PhD, DSc

“Ischemia, reperfusion and cardioprotection: successes and failures in the journey from laboratory to man ”

## 2007 Award Winner

# David J. Hearse, PhD, DSc Bologna, Italy



David Hearse started his university education at the University of Wales in Cardiff where he chose to study the newly emerging field of biochemistry in preference to medicine. During his studies for a PhD he developed a strong interest in biochemical pharmacology. As a student, he earned the distinction of publishing 4 back to back papers in one issue of the *Journal of Pharmacology* and the opportunity of a summer studentship at New York University Medical Center.

This, in turn, led to an invitation

to join the faculty of the Department of Pharmacology at NYU in 1968. Here, he was introduced to the now fashionable world of pharmacogenetics and in 1970, whilst contemplating the opportunity to study for an MD in New York, he received an invitation from the penicillin Nobel Laureate, Professor Sir Ernst Chain, to return to the UK to join the Department of Biochemistry at Imperial College. Here he was tasked with 'replacing' a young South African called Lionel Opie (the 1968 recipient of the Peter Harris Award), who had built a rat heart perfusion rig at Imperial but was moving on to new pastures. Lionel Opie could, of course, neither be 'replaced' nor cloned but he did teach David the mysteries of the isolated working rat heart and the measurement of tissue metabolites. At that time, Ernst Chain urged David to pursue Chain's conviction (probably stimulated by Opie's classical metabolic studies) that glucose could offer a great deal to the ischemic heart through its ability to support anaerobic ATP production. Paradoxically, Chain was at academic odds with Peter Harris over the role of fatty acids during ischemia and occasionally at conferences a fine tight-rope had to be walked! From these early days, David built up a very active perfusion facility and established a strong interest in the concept of cardioprotection which in turn led him into his well known studies of 'reperfusion injury' where he coined the phrase 'oxygen paradox'. He was the first person to recognize that the adverse structural, contractile and electrophysiological consequences of reperfusion were directly attributable to the readmission of molecular oxygen rather than the restoration of flow and he was the first to speculate that free oxygen radicals may be the culprit – a topic that he was to investigate extensively in the following years.

In his early days in London, David was to meet Peter Harris and it was Peter who encouraged him to become a member of the International Society for Heart Research and later to propose that he join the Council (1980). David went on to become Secretary General in 1989 (when, amongst other things, he launched *Heart News and Views* and persuaded Tom Ruigrok to be its enduring and excellent Editor) and President in 1998. In the past 30 years he has served the Society in many ways – as an Editorial Board member and Associate Editor of the *Journal of Molecular and Cellular Cardiology*, and as the organizer of the famous 1988 meeting of the ISHR European Section in Oxford, and, with Roberto Ferrari, the equally famous and successful 1998 ISHR World Congress in Rhodes - despite a string of major organizational crises such as the strike of Olympic airlines at the start of the Congress with delegates stranded all over the world (suffice it to say that the only planes eventually flying to Rhodes that day were the ones carrying ISHR delegates!). David has also been an active member of the ISHR European Section and a member of its Council; he has also had strong links with other Sections. In 1972 he founded what was to become the British Society for Cardiovascular Research, serving as Treasurer, Secretary of President.

During the mid 1970's, David had a chance meeting with a cardiac surgeon (Mark Braimbridge) which led to a visit to the operating theatre at St Thomas' Hospital and the offer to establish a new Department in the new Rayne Institute for Biomedical Research at St Thomas' where he was appointed Professor in 1986. This was a major turning point in David's career in that it directed his work towards the field of cardiac surgery and transplantation and the importance of translating laboratory research into medical practice. His keynote achievement was the development and introduction into worldwide use of the St Thomas' Hospital Cardioplegic Solution, a carefully formulated solution which, when infused into the coronary arteries of the human heart, extended the safe period of elective ischemic arrest from less than 1 to more than 4 hours. The result was the dramatic reduction in surgical mortality figures and in particular the abolition of lethal ischemic contracture (the 'stone heart'), a phenomenon that he went on to investigate and elucidate molecular mechanisms of. His growing recognition as an expert in cardioprotection allowed David to build up a large laboratory with around 30 excellent and skilled colleagues (many of whom, to David's pride, have gone on to become international experts in their own right). All of these achievements were aided greatly by very successful fund raising from the British Heart Foundation, Wellcome Trust and Medical Research Council plus the distinction of obtaining three consecutive NIH grants for his work on reperfusion, free radicals and anti-oxidants. The Cardiovascular

Research laboratory at St Thomas' has always been very international in nature with visiting fellows from many countries, especially Japan from where over 50 young physicians and surgeons have travelled to spend 1 or 2 years of training and research.

In addition to publishing over 400 papers and 10 books, David also found time to take on the challenge of being Editor in Chief of *Cardiovascular Research* (1992) where he and his energetic in-house team of Associate Editors transformed the Journal and its impact factor. During their tenure, the editorial team demonstrated that manuscripts could be rapidly reviewed and quickly published; an achievement that was to stimulate all other cardiovascular journals to get their 'acts into order' – months of waiting for an editorial decision were transformed into just weeks or days and submissions soared. In 1997, with Roberto Ferrari, David founded *Dialogues in Cardiovascular Medicine* a unique journal that he and Roberto have edited for the past 10 years.

Not surprisingly, David has lectured extensively throughout the cardiovascular world. He has been the recipient of numerous awards and distinctions including a DSc, an Honorary Fellowship of the Royal College of Physicians and a number of other Fellowships. Notwithstanding, he finds time for his many interests including carpentry and restoring a derelict agricultural oast house into a home in rural Sussex.

## Past Award Winners

### Seturo Ebashi, Japan

(Melbourne, Australia: 1986)

### Albrecht Fleckenstein, Germany

(Ann Arbor, MI, USA: 1989)

### Robert B. Jennings, USA

(Kobe, Japan: 1992)

### Howard E. Morgan, USA

(Prague, Czech Republic: 1995)

### Lionel H. Opie, South Africa

(Rhodes, Greece: 1998)

### Robert J. Lefkowitz, USA

(Winnipeg, Canada: 2001)

### Arnold M. Katz, USA

(Brisbane, Australia: 2004)