

2006 Award Winners



In 2004, SFRBM created a new award for its senior investigators -- a "Discovery Award" which recognizes a significant advancement in the field. We continue to present a "Lifetime Achievement Award" which recognizes an aggregate body of work over the scientist's career.

SFRBM is pleased to present the association's the 2006 Lifetime Achievement Award to **Kelvin J. A. Davies, Ph.D., D.Sc., F.O.S.** of the University of Southern California and the 2006 Discovery Award to two recipients, **Jason Morrow, MD** and **L. Jackson Roberts II, MD** of Vanderbilt University.

SFRBM LIFETIME ACHIEVEMENT RECIPIENT



**Kelvin J. A. Davies,
Ph.D., D.Sc., F.O.S.**

Kelvin J. A. Davies, Ph.D., D.Sc. has devoted his career to the study of adaptive responses to free radicals and oxidative stress in biology. In particular, he is interested in the protective role of proteolytic enzymes, and the inducibility of stress-protective genes. Starting in the early 1980's, the Davies Lab first uncovered the importance of the Proteasome in degrading oxidatively damaged cytoplasmic, nuclear, and endoplasmic reticulum proteins, and then went on to uncover the key role of the Lon protease in degrading oxidized mitochondrial proteins. Having been the first to demonstrate free radical production during long-term exercise adaptation in the late 1970's, Professor Davies turned to cell and molecular biology studies of transient adaptation in the 1990's, and his laboratory discovered a series of new stress-adaptive mammalian genes. One of these genes, RCAN1 (for Regulator of Calcineurin 1), expresses multiple proteins under various conditions, through a combination of differential splicing (of its seven exons), and alternate transcription start and stop sites. One form of the protein, RCAN1-4, appears to provide transient oxidative (and calcium) stress resistance, while another isoform, RCAN1-1, is associated with Alzheimer's Disease and Down Syndrome.

Dr. Davies was born and raised in London, England and is now a dual citizen of Great Britain and the USA. He was educated in London, Liverpool, and Lancaster; the University of Wisconsin; the University of California at Berkeley (Ph.D.); and Harvard Medical School (post doc.). From 1981-1983, he was an Instructor at Harvard University. From 1983-1990, he was Assistant, then Associate Professor in the Institute for Toxicology and the Department of Biochemistry at the University of Southern California (USC). In 1990, he became Chairman of the Department of Biochemistry & Molecular Biology and Professor of Molecular Medicine at New York's Albany Medical College. In 1996, he returned to USC to become the James E. Birren Chair of Gerontology, Associate Dean for Research, and Professor of Molecular & Computational Biology.

Deeply involved in the field of free radicals and oxidative stress, Davies is the (founding) Editor-in-Chief of *Free Radical Biology and Medicine*, a former President of the Oxygen Society (now SFRBM), and immediate Past-President of the International Society for Free Radical Research. He is a Fellow of the Society for Free Radical Biology & Medicine; a Fellow of the Gerontological Society of America; a Fellow of the American Association for the Advancement of Science; winner of the Harwood S. Belding award of the American Physiological Society; and holder of various medals, honorary degrees, and fellowships from several universities and foreign scientific societies. In 1996, he was named the National Parkinson Foundation Scholar.

At USC's Andrus Gerontology Center, Davies is currently focusing his research on the regulation and inducibility of the Proteasome, the Lon protease, RCAN1-1, RCAN1-4, and a wide spectrum of oxidative stress repair genes during aging. These studies are revealing a consistent pattern of declining oxidative stress responses with age, such that senescence may be partially characterized by a declining ability to adapt appropriately to transient stresses. His laboratory is involved in biochemical, molecular biology, and genetic studies of both normal aging processes, and aging pathologies such as Parkinson and Alzheimer diseases.

SFRBM DISCOVERY AWARD RECIPIENTS

L. Jackson Roberts II, MD and Jason Morrow, MD

In 1990, Drs. Roberts and Morrow discovered isoprostanes, a unique series of prostaglandin-like compounds formed from the free radical-initiated peroxidation of arachidonate. Pioneering work subsequently undertaken by them has elucidated novel mechanisms of isoprostane formation, their role as biological mediators of tissue damage, and their potential as indices of oxidative stress in humans. The discovery of the isoprostanes was a landmark that Drs. Roberts and Morrow have applied to understanding both basic mechanisms of oxidant stress as well as the role of isoprostanes in human disease. They have demonstrated that risk factors for diseases such as atherosclerosis and neurodegeneration are associated with excessive isoprostane formation, providing a key mechanistic link between oxidant stress and disease pathogenesis. Further, they have extensively examined the role of pharmacological, dietary and environmental factors in modulating isoprostane formation and oxidant stress *in vivo*. Their work has contributed importantly to the role of these oxidized lipid mediators in human physiology and pathophysiology.



L. Jackson Roberts II, MD

L. Jackson Roberts II, MD is a Professor of Pharmacology and Medicine at Vanderbilt University School of Medicine in Nashville, Tennessee. Dr. Roberts received his B.A. degree from Cornell College in Mt. Vernon, Iowa and he received his MD degree from the University of Iowa. He did an Internal Medicine residency at Washington University in St. Louis and then moved to Vanderbilt University where he did a postdoctorate fellowship in Clinical Pharmacology, after which he joined the faculty in 1977. His initial research focus at Vanderbilt was on prostaglandins. However, his discovery, along with Jason Morrow, that prostaglandin-like compounds (isoprostanes) could be formed by a non-enzymatic free radical mechanism in 1990 led him to change his area of research to the field of free radical biology and medicine. His research emphasis is largely translational in nature taking basic discoveries related to lipid peroxidation and oxidative stress/injury in the laboratory and exploring their role in the pathogenesis of human disease.

Dr. Roberts has been an active member of the Society since the mid-1990's. He has been a frequent presenter at the Sunrise School and Pre-Meeting Workshops at the annual SFRBM meetings and he is an Associate Editor of *Free Radical Biology & Medicine*.



Jason Morrow, MD

Jason D. Morrow, MD is the Chief of the Division of Clinical Pharmacology and the F. Tremaine Billings Professor of Medicine and Pharmacology at Vanderbilt University School of Medicine in Nashville, Tennessee. Dr. Morrow received his medical degree from Washington University in St. Louis and his undergraduate training at Vanderbilt University. He subsequently was a fellow in Clinical Pharmacology and trained with Dr. Jack Roberts before joining the faculty at Vanderbilt in 1994. His work is both laboratory-based and patient-oriented and has contributed importantly to our understanding of oxidant stress and inflammation and their diagnosis and treatment.

An active member of the Society since the mid-1990's, Dr. Morrow serves as a Council member (2004-present) and is on the Editorial Board of *Free Radical Biology and Medicine*. He has led multiple Society educational and scientific functions over the past five years.