

The Peter W. Hochachka Memorial Lecture series is supported by an endowment established by the friends, colleagues, and family of Dr. Peter Hochachka. The purpose of the endowment is to pay tribute to Peter's rich legacy and to promote scientific discussion among students with a passion for Adaptational Physiology and Biochemistry. The endowment supports an annual lecture series in his name, to provide inspiration to students through exposure to national and international researchers working in a field pioneered by Peter.

Please consider joining the others who have supported the establishment of the Peter W. Hochachka Memorial Endowment Fund.

Individuals and organizations interested in making a donation to Peter's Memorial Endowment are encouraged to contact:

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Previous Hochachka Lecturers:

Dr. George Somero, 2003

Dr. Kenneth Storey, 2004

Dr. Eric Shoubridge, 2005

Dr. Hans Otto Pörtner, 2006

The Fifth Annual Peter W. Hochachka Memorial Lecture



Monday, March 26th 2007

4:30 PM

AERL (Fisheries) Building, Room 120

Refreshments: 4:00pm in Foyer

Dr. Steven Hand

***Biological Stasis in Nature:
Metabolic Arrest, Avoidance of
Apoptosis, and Cell Stabilization.***

Peter W. Hochachka was born on March 9th, 1937, in Bordenave, Alberta. He obtained his B.Sc. from the University of Alberta (1959) which was followed by an M.Sc. from Dalhousie and Ph.D. from Duke University in 1964. Following brief spells at Duke as a post doctoral fellow and the University of Toronto as an Assistant Professor, he moved to the University of British Columbia in 1966.

A combination of imagination and determination allowed Peter to develop entirely new lines of research concerned with the way animals survive extreme environmental conditions. The world was both his laboratory and lecture hall, as he was the most peripatetic of scientists. He led, or participated in, at least 9 research expeditions on the RV Alpha Helix, to regions as diverse as the Amazon and the Arctic. He also participated in 6 research expeditions to the Antarctic, four to the high Andes and one to the Himalayas.

His initial work in the 1970s served as an intellectual “jump start” for the field of comparative physiology and biochemistry, acting as a catalyst for an explosion of research around the world, and establishing the new and exciting field of adaptational biochemistry.

With nearly 400 publications, 7 books, and service on local, National and International committees, Peter made an immeasurable contribution to Canadian Biology that was recognised with the highest science awards given in Canada: the Canada Council Killam Memorial Prize in Science in 1993 and the NSERC Gold Medal. In 2000, he was appointed an Officer of the Order of Canada. In addition, he received many other prestigious awards including Fellowship in the Royal Society of Canada (1983, Flavelle Medal, 1990), Guggenheim (1977), Queen Elizabeth II (1983, the B.C. Science Council Gold Medal (1987), the Fry Medal from the Canadian Society of Zoologists (1995) and in 1995 was BC's inaugural Academic of the Year.

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4:30 p.m.

Dr. Steven Hand

Biological Sciences, Louisiana State University

Biological Stasis in Nature: Metabolic Arrest, Avoidance of Apoptosis, and Cell Stabilization.

ABSTRACT: Depression of metabolism and development is frequently observed among animals that inhabit inconsistent environments. In such latent states, an organism's energy reserves are conserved and its tolerance to environmental stresses like dehydration and oxygen limitation is markedly extended. At the cellular level, however, the extreme arrest of energy flow observed in some invertebrates raises fundamental issues about cell survival. Ion gradients, thought to be essential for life, are apparently dissipated. In the absence of energetically-expensive synthesis of macromolecules, half-lives of mRNA and protein are lengthened, and signaling to activate apoptotic cell death is prevented. Late embryogenesis abundant (LEA) proteins, originally discovered in plants, enhance cellular desiccation tolerance when they co-occur with non-reducing sugars. In short, features of the cell stasis phenotype and associated benefits for cell stability are becoming clearer. Applications for stabilizing mammalian cells during storage in dried and frozen states are receiving increased attention in biomedical research.

**AERL (Fisheries) Building, Room 120
2202 Main Mall, UBC Campus**