



**Engineers Australia College of Biomedical Engineers – SA Branch,
The Society for Medical and Biological Engineering, &
The Australasian College of Physical Scientists and Engineers in Medicine**

Jointly present

SPORTS ENGINEERING AT THE UNIVERSITY OF ADELAIDE

Professor Colin Hansen, Head School of Mechanical Engineering

A/Professor Richard Kelso, Coordinator Sports Engineering program

Abstract

Sports engineers apply their specialised mechanical engineering skills to the design and manufacture of sports equipment and apparel, rehabilitation equipment and exercise equipment, as well as to sports facility design. Examples of projects that a sports engineer may work on include designing tennis racquets to reduce the incidence of "tennis elbow", analysing how a tennis ball bounces, analysing how a cricket or golf ball flies through the air, developing and applying novel materials to enhance sports equipment performance, to mention just a few. This seminar will discuss the rationale for introducing a new Sports Engineering program in the School of Mechanical Engineering at the University of Adelaide. The program aims and content, including biomedical subjects and sports-specific subjects, will be discussed along with potential careers for graduates and research areas for postgraduate students. Opportunities for research collaboration with the Faculties of Science and Health Sciences will also be discussed along with details of School of Mechanical Engineering research staff with expertise in relevant areas.

About the Speakers

Colin Hansen

Following a 7-year career as a noise and vibration consultant, Professor Hansen joined the School of Mechanical Engineering at The University of Adelaide in 1986 and has been Head of School since 1996. He has authored or co-authored 10 books, edited two books, contributed a number of chapters to various books and co-authored or authored over 250 papers in international journals and conference proceedings. Most of his past work has focused on the development of active noise control systems. More recently he has become involved in aerodynamic noise control and projects using ultrasound for the control of blue green algae. He is a current Member of the Automotive Committee of AusIndustry, which makes recommendations on research funding for the automotive industry. He is on the editorial boards of six international journals, has chaired three Engineers Australia accreditation panels and participated in one other. He was elected President of the International Institute of Acoustics and Vibration for the period, 2000 to 2002. He has also served in a number of other executive positions in the same organization since 1997 and is currently on the Board of Directors. He is a Fellow of the International Institute of Sound and Vibration, the Australian Acoustical Society and Engineers Australia, and is a Chartered Professional Engineer. He is an ex rugby union player and represented SA in the state U/20

team. He is a keen down-hill skier, surfer and hang glider pilot and has been an active participant in these sports for more than 30 years.

Richard Kelso

Richard Kelso graduated with first class honours in Mechanical Engineering from the University of Melbourne in 1982. Motivated by an intense interest in sailing and aerodynamics, he graduated with a PhD in fluid mechanics from the University of Melbourne in 1992. During his PhD studies he also started an instrumentation company now known as Innovonics Ltd. From 1992 he undertook postdoctoral research at CSIRO and Princeton University before taking a position at DSTO in Melbourne in 1994. In 1995 he was attracted to the University of Adelaide where he has undertaken teaching and research in fluid mechanics, thermodynamics and compressible aerodynamics. During this period he has published over 50 refereed journal and conference publications in relevant fields, one invited book chapter, and has been granted two patents. He has also consulted widely with industry in areas such as combustion, fugitive dust suppression, and fine particle removal. Highlights include his work on the development of the fuel and combustion system of the Sydney and Athens Olympic Torches, stadium cauldrons and fire rings. He has a long-standing interest in biomechanics, having designed a wheelchair ergometer during his undergraduate studies and having researched the mechanics of cycling and archery, and the fluid mechanics of swimming. He is an active participant in numerous sports, having competed in swimming, cycling, club-level motor racing, athletics, downhill skiing, and sailing in his younger days, and more recently being an active cyclist, skier, tennis player and occasional archer.

Event details:

Date: Wednesday 11th June 2008

Venue: Chapman Hall, Engineering House, 11 Bagot Street, North Adelaide

Time: 5:30pm, for a 6:00 pm start

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