THE UNIVERSITY OF MELBOURNE

Focus on Physics 2011
VCE Physics in the Modern World

Friday 11 November, 9:00AM - 3:30PM
Laby Theatre, School of Physics, University of Melbourne
Cost: $99.00 (including GST): Lunch, writing materials and notes provided

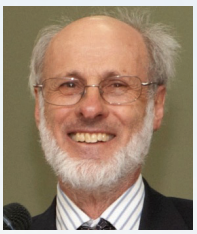
This year's program concentrates on the physics of the world in which your VCE students will work. Practising physicists from four areas have been invited to illustrate applications of the topics covered in the VCE study design. Additionally, one session looks at the potential that we have as teachers, to inspire students with a vision of their possibilities in the 21st century.
http://go.unimelb.edu.au/6fi

8:15AM REGISTRATION

9:00AM

Einstein and gravitational waves
Einstein predicted Gravity waves, but their detection has proven elusive. Of the experiments proposed to detect them, this orbiting observatory, LIGO (Laser Interferometer Gravitational Wave Observatory) is the newest and most sophisticated. **Dr David Ottaway** of Adelaide University will explain the creation of gravity waves and how LIGO is designed to detect them

10:15AM



Renewable energy
Dr Peter Seligman is a member of the Melbourne Energy Institute. **energy.unimelb.edu.au** His recent book *Australian Sustainable Energy - by the numbers* provides a clear account of Australia's renewable energy potential. Peter has analysed a raft of available technologies, and offers a blueprint of a nationwide renewable energy system based on the most efficient mix of technology, societal and habitual changes.

11:15AM MORNING TEA

11:30AM

Inspiration for teachers
Physics is engaging, stimulating and exciting. In this session **Dr Roger Rassool** introduces two inspirational teachers **Carolyn Hutchens** and **Kim Northmore**, who recently visited the Large Hadron Collider in Switzerland as part of the ACAS/CERN Summer School. They will share the highlights of their experience and relate how it has motivated and changed their teaching.

12:30PM LUNCH

During the lunch break, **Nick Nicola**, designer-of-equipment extraordinaire, will display a number of demonstrations that are relevant to the VCE Physics study. Nick developed, and is curator of, the Physics museum:
www.ph.unimelb.edu.au/museum
Details of the physics demos can be found at
lecturedemo.ph.unimelb.edu.au

2:00PM

Nuclear power: how reactors work, and what can go wrong
The failure of the Fukushima reactor earlier this year raised many questions about the safety of nuclear power. VCE study design includes nuclear power as a topic, and **Prof Jim Jury** of Trent University in Canada will discuss nuclear reactor design and safety considerations.

3:00PM

Nuclear physics and medical diagnosis
In the modern world, nuclear techniques have revolutionised methods of medical diagnosis. It is therefor not surprising that the VCE study design includes topics on the nucleus, ionizing radiation and medical applications. **Dr Graeme O'Keefe** directs the department of Nuclear Medicine and PET services at the Austin Hospital and will talk on nuclear physics and medical diagnosis.