Focus on Physics: Phenomenal Physics in 2012

Friday 9 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 three significant scientific advances have been made that will impinge dramatically on our understanding of physics and the physics that our students will want to understand. This year’s program is centered around the confirmation of the Higgs boson, the ‘Curiosity’ landing on Mars, and the decision to build a major part of the Square Kilometre Array (SKA) in Australia.


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8:15AM REGISTRATION

9:00AM Welcome and Introduction

**Landing ‘Curiosity’ on Mars**

Prof. David Jamieson is head of the School of Physics at Melbourne University, and past president of the Australian Institute of Physics. He is an experimental physicist, with more than 200 published research papers. Amongst his current interests is the Research Centre for Quantum Computer Technology. Importantly for this meeting, he is an outstanding lecturer, and will discuss the technology of the amazing feat of landing the “Curiosity” rover on Mars.

9:10AM

10:15AM Finding the Higgs boson

The confirmation of the Higgs boson in August was a seminal event in particle physics. The data was taken at CERN using a proton beam from Large Hadron Collider, and the huge ATLAS detector. Prof. Geoff. Taylor and his research group were major contributors to the construction of this detector. He will discuss the ATLAS detector, the role of the Higgs in the standard model, and how elementary particles acquire mass by interaction with its field.

11:15AM MORNING TEA

11:30AM VCE Study design

The VCE Study design for physics is of critical importance to high-school teachers and university academic staff. Changes, both minor and major, are always topics of discussion and often of concern. Dr. Syd. Boydell is currently chair of the VCE Physics exam-setting panel, and brings to that position, and to this meeting, many years of experience in physics education. He will comment on the current situation of the teaching and examination of physics in this state.

12:30PM Lunch

During the lunch break, on level 4 of the Physics building, our team of skilled laboratory staff, Jude Prezens, Steven Damen and Stephen Marshal will show some of the physics demonstrations that may be relevant to the VCE physics study designs. They will be pleased to advise you on any laboratory matters. All our demos are online: [http://lecturedemo.ph.unimelb.edu.au/](http://lecturedemo.ph.unimelb.edu.au/). The Physics Museum web page can be found here: [www.ph.unimelb.edu.au/museum/](http://www.ph.unimelb.edu.au/museum/)

1:30PM The Square Kilometre Array

In a major boost to Astronomy in Australia, it was recently announced that a major part of the SKA (Square Kilometre Array) will be located in Australia. This distributed array of some 3000 dish receivers and thousands of dipole antennas is expected to answer some of the most fundamental questions in astronomy. Dr. Lisa Harvey-Smith is a research astronomer at CSIRO’s Astronomy and Space Science Division in Sydney, and was part of the team that secured Australia’s role. She works on the SKA Pathfinder project, tasked to deliver the science-ready telescope.

1:30PM Inspiring your students

Not all students that we teach have enrolled in physics because it is their first love. Encouraging those with low interest, whilst stimulating the committed ones is one role of the physics teacher. Frank de la Rambelya, science co-ordinator at South Oakleigh Secondary College will outline his teaching philosophy, and indicate some of the avenues that are available to nurture and encourage students to learn, and enjoy doing so.