2016 Physics Nobel Prize Lecture & Vic Branch AGM

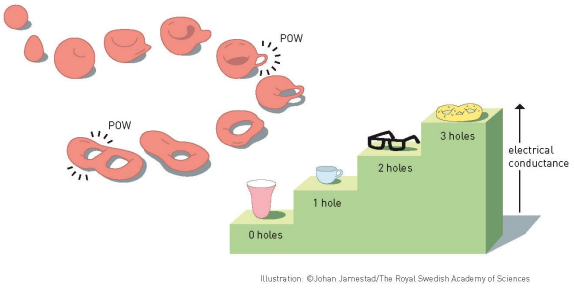
Prof. Michael Fuhrer

1 December, 6—8 pm

Swinburne (Hawthorne) BA201

RSVP: aip.org.au/category/vic/

The Nobel Prize in Physics 2016 was awarded to David J. Thouless, F. Duncan M. Haldane and J. Michael Kosterlitz "for theoretical discoveries of topological phase transitions and topological phases of matter". In this talk I will try to explain the concept of a "topological phase of matter" and how this concept has expanded our knowledge of how electrons behave in solids. Before the work of Thouless, Haldane and Kosterlitz, transitions between phases of matter were understood within Landau's framework of an order parameter arising from the breaking of a symmetry. Thouless, Haldane and Kosterlitz demonstrated that some phase transitions may instead be accompanied by a change in the topology of a system, without a change in symmetry. This idea has led to the discovery of a variety of topological phases of real solid-state materials which may form the basis of new types of electronic devices.



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David J. Thouless
Prize share: 1/2

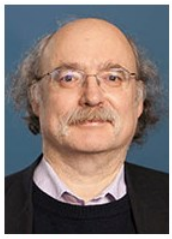

Photo: Princeton University, Comms. Office, D. Applewhite
F. Duncan M. Haldane
Prize share: 1/4

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J. Michael Kosterlitz
Prize share: 1/4

Michael S. Fuhrer received his B.S. in Physics from the University of Texas at Austin in 1990, and Ph. D. in Physics from the University of California at Berkeley in 1998 under supervision of Prof. Alex Zettl. After a postdoctoral appointment at Lawrence Berkeley National Laboratory, Fuhrer joined the University of Maryland in 2000, and from 2009-2012 was Professor, and Director of the Center for Nanophysics and Advanced Materials. In 2012 Fuhrer was awarded an ARC Laureate Fellowship, and moved to Monash University in 2013. Fuhrer founded the Monash Centre for Atomically Thin Materials which he directs, and starting in 2017 Fuhrer will direct the ARC Centre of Excellence in Future Low Energy Electronics Technologies. Fuhrer's current research interests lie in understanding the electronic properties of atomically-thin materials (such as graphene and transition-metal chalcogenides), and topological materials.

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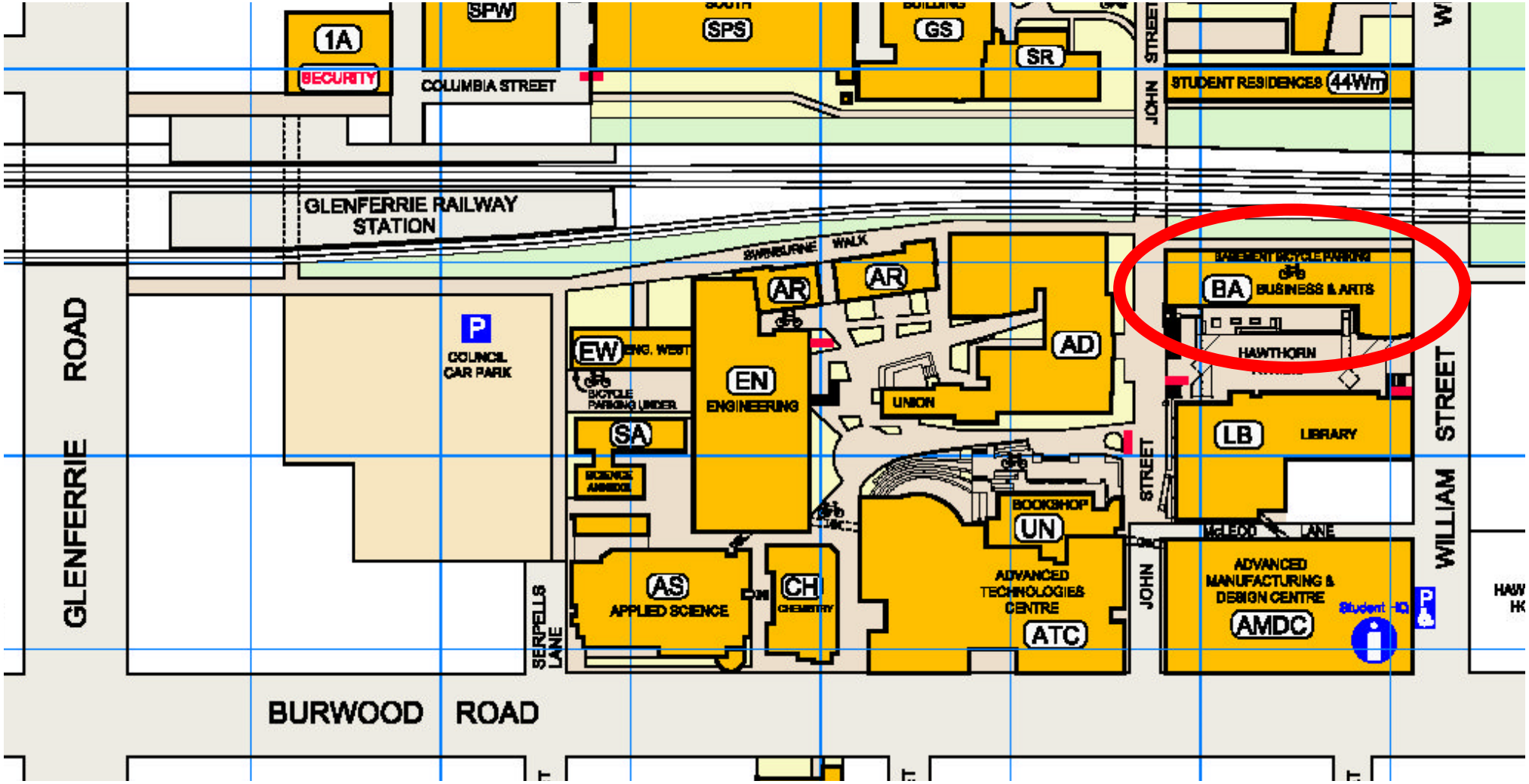

Date: Thursday the 1st of December 2016

Venue: Swinburne University, Hawthorn campus, BA building, BA201 (enter from Burwood Road)

Time: lecture 6.30 - 7.30 pm,
AIP AGM 7.30 - 8:00 pm

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