



IEEE

IEEE South Australia Section

Annual Distinguished Lecture and Dinner

The IEEE South Australia Section Committee invites you and your partner to the Annual Dinner and Lecture:

The Future of Computing

Professor Michelle Simmons
ARC Laureate Fellow and
Director of the Centre of Quantum Computation & Communication Technology



Date: 5 October 2016

Time: Pre-dinner Drinks 6:00 pm - 7:00 pm
Dinner & Lecture 7:00 pm - 10:00 pm

Venue: The Balcony Restaurant
Strathmore Hotel, North Terrace, Adelaide

Three Course Dinner and Drinks

RSVP: Remove the slip below and return completed
to IEEE SA Section by 28th September 2016

Dress Code: Neat Casual

Return to:
IEEE SA Section
PO Box 53
Elizabeth SA 5112

Phone: (08) 8201 5052
Fax: (08) 8201 2904

E-mail: south.australia@ieee.org

Name _____

Address _____

Phone/Email _____

Special dietary requirements _____

Method of payment Cheque Cash Visa MasterCard EFT*

*Account name: IEEE-SA section: BSB #: 06 5122
Account #: 0090 7594

Credit Card # _____ Exp. date _____

Signature _____

2016 Annual Lecture and Dinner

Sign up for:	Price
<input type="checkbox"/> IEEE Member	\$70
<input type="checkbox"/> Member's partner. Name: _____	\$70
<input type="checkbox"/> Non-member	\$90
<input type="checkbox"/> Non-member's partner. Name: _____	\$90
<input type="checkbox"/> IEEE Student Member	\$40
<input type="checkbox"/> Student member's partner. Name: _____	\$40
Total: _____	

All prices include GST.

Credit Card payments will incur a 2.5% surcharge



IEEE South Australia Section Annual Lecture

The Future of Computing

Professor Michelle Simmons

ARC Laureate Fellow and

Director of the Centre of Excellence for Quantum Computation
and Communication Technology

Down-scaling has been the leading paradigm of the semiconductor industry since the invention of the first transistor in 1947. However miniaturization will soon reach the ultimate limit, set by the discreteness of matter, leading to intensified research in alternative approaches for creating logic devices. This talk will discuss the development of a radical new technology for creating atomic-scale devices which is opening a new frontier of research in electronics globally. We will introduce single atom transistors where we can measure both the charge and spin of individual dopants with unique capabilities in controlling the quantum world. To this end, we will discuss how we are now demonstrating atom by atom the best way to build a quantum computer – a new type of computer that exploits the laws of physics at very small dimensions in order to provide an exponential speed up in computational processing power.

Biography

Professor Simmons is an Australian Research Council Laureate Fellow & Director of the Centre of Excellence for Quantum Computation and Communication Technology. She has pioneered unique technologies internationally to build electronic devices in silicon at the atomic scale, including the world's smallest transistor, the narrowest conducting wires and the first transistor where a single atom controls its operation. This work opens up the prospect of developing a silicon-based quantum computer: a powerful new form of computing with the potential to transform information processing. Professor Simmons is one of a handful of researchers in Australia to have twice received a Federation Fellowship and now a Laureate Fellowship, the Australian Research Council's most prestigious award of this kind. She has won both the Pawsey Medal (2006) and Lyle Medal (2015) from the Australian Academy of Science for outstanding research in physics and was, upon her appointment, one of the youngest fellows of this Academy. She was named Scientist of the Year by the New South Wales Government in 2012 and in 2014 became one of only a few Australians inducted into the American Academy of Arts and Sciences. As a recent Fellow of ATSE, she was awarded the 2015 CSIRO Eureka Prize for Leadership in Science and in 2016 was awarded the Foresight Institute Feynman Prize in Nanotechnology for her work in '*the new field of atomic-electronics, which she created*'. She is Editor-in-Chief of Nature Quantum Information.