

REGISTRATION IS FREE!

The talk will be followed by light refreshments and an opportunity to meet the speaker.

National ICT Australia invites you to a talk presented as part of the Victoria Research Laboratory Seminar Series. Tuesday August 30, 2005

Details available online at
<http://www.ee.unimelb.edu.au/research/nicta/seminars/vrl/index.html>

When:
4-5pm, Tuesday August 30, 2005

RSVP:
Email vrlss@nicta.com.au
By Friday, August 26, 2005

Where:
Swanston Room, Rydges Hotel
701 Swanston St,
Carlton
(cnr Lincoln Square North)
MELWAYS Map 43 Ref H5

Public parking is available at an hourly rate at the University Square car park. Enter via Bouverie St. Local street parking is also available.



Robert Calderbank Prof. of Electrical Engineering & Mathematics, Princeton University

Quantum Computing and Cellular Phones

ABSTRACT: Multiple antennas are transforming the rate, reliability and reach of wireless systems. Quantum computers are calling into question the security of cryptosystems where security rests on the presumed intractability of factoring. The speaker, an AT&T Fellow and co-inventor of space-time codes, will use nineteenth century mathematics to connect these two breakthrough technologies.

BIOGRAPHY: Dr. Calderbank is a Professor of Electrical Engineering and Mathematics at Princeton University where he directs the Program in Applied and Computational Mathematics. He joined Princeton from AT&T where he was Vice President for Research and responsible for designing the only Research Lab in the world where the primary focus is data. Inventions by Dr. Calderbank at Bell Labs and AT&T have transformed communications practice in voiceband modems, advanced read channels for magnetic recording, and wireless systems. He also created the framework for fault tolerant quantum computation together with Peter Shor.

Dr. Calderbank was honoured by the IEEE Information Theory Prize Paper Award in 1995 for his work on the Z_4 linearity of Kerdock and Preparata Codes (jointly with A.R. Hammons Jr., P.V. Kumar, N.J.A. Sloane, and P. Sole), and in 1999 for the invention of space-time codes (jointly with V. Tarokh and N. Seshadri). He became an AT&T Fellow in 2000, received the IEEE Millennium Medal in 2000, and was elected to the National Academy of Engineering in 2005

