

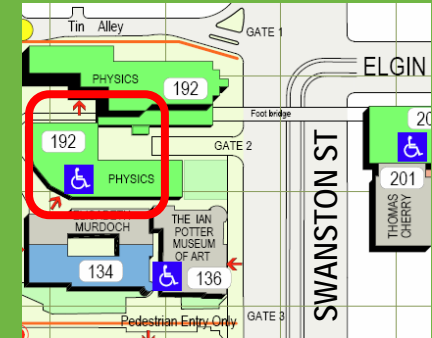
Details online at [http://nicta.com.au/director/mediacentre/events\\_calendar/vrlss.cfm](http://nicta.com.au/director/mediacentre/events_calendar/vrlss.cfm)

# National ICT Australia invites you to the Victoria Research Laboratory Big Picture Seminar Series Thursday July 13, 2006

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

**REGISTRATION IS ESSENTIAL FOR THIS FREE EVENT**  
RSVP to [vrlss@nicta.com.au](mailto:vrlss@nicta.com.au) by Monday July 10, 2006

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



**When:** 4-5pm, Thursday July 13, 2006

**Where:** Laby Theatre, Physics Building (Building 192), The University of Melbourne, Carlton Campus

## Kim Roberts Director of Research for Optical Systems, Nortel Slaying Optical Dragons

**ABSTRACT:** The saga of optical fibre communications can be told as a tale of intrepid protagonists overcoming a sequence of fierce barriers. The physical barriers occur in a strict pattern of alternation between two classes of manifestation: noise and distortion. Fibre and electro-optic innovations have allowed deployment of ever more useful optical networks by sequentially defeating these barriers. However, as soon as a new family of inventions overcomes the immediate barrier, the next and more daunting barrier starts to become apparent.

Kim's team has recently deployed solutions that completely eliminate the distortion barrier known as chromatic dispersion, and are starting to batter down the subsequent noise barrier of fibre nonlinearity. Digital signal processing, using trillions of arithmetic operations per second in high speed CMOS, has allowed this low cost agile optical networking. It is their quest to make high capacity optical connectivity independent of optical physics.

**BIOGRAPHY:** As a student, Kim applied digital signal analysis to the human brain for accurate diagnosis of Multiple Sclerosis. Since 1984, he has been developing innovative solutions for optical networks. Optical products that Kim initiated have generated billions of dollars in revenue. He has been granted 62 patents while at the Nortel labs in Ottawa Canada, and Harlow UK. He recently demonstrated the first 10 Gbit/s packet encryption, integrated into an optical multiservice switch. Kim's digital signal processing in the eDCO product has made optical compensation devices obsolete.

