

# Summary of Discovery Projects Proposals for Funding to Commence in 2007

## Victoria

### Victoria University

**DP0773999** A/Prof SF Collins; Prof GW Baxter; Dr SA Wade; Prof KT Grattan

**Approved Project Title** **Fibre Bragg grating microstructures: a novel sensing tool?**

**2007 :** \$100,000

**2008 :** \$95,000

**2009 :** \$90,000

**Primary RFCD** 2917 COMMUNICATIONS TECHNOLOGIES

**Administering Organisation** Victoria University

#### Project Summary

This project seeks to produce novel optical fibre sensors based on in-fibre Bragg gratings that will find applications in the measurement of transverse strain. The development of improved measurement techniques provides for better monitoring of industrial processes that will provide greater efficiency and safety, and thereby significant annual cost savings and improved safety.

**DP0774689** Prof M Faulkner; Dr M Shafi; A/Prof PJ Smith

**Approved Project Title** **Cognitive Radio Technology: Increasing Spectral Efficiency of Wireless Communications**

**2007 :** \$161,899

**2008 :** \$107,286

**2009 :** \$110,000

**Primary RFCD** 2917 COMMUNICATIONS TECHNOLOGIES

**Administering Organisation** Victoria University

#### Project Summary

The radio spectrum is an expensive resource and normally requires licensed operation. Cognitive Radio has been proposed as a means of releasing large tracts of unused spectrum without causing interference to other users. It uses a combination of frequency agility and intelligence to identify unused spectrum for transmission. This study will evaluate the performance gains of such a system by developing a spectrum occupancy data base to test a variety of radio access strategies. Cognitive Radio is particularly suited to providing low cost broadband access to remote, rural and city fringe dwellings.

**DP0770479** Dr X Yi; Prof Y Zhang

**Approved Project Title** **Privacy Protection in Distributed Data Mining**

**2007 :** \$60,236

**2008 :** \$55,236

**2009 :** \$50,236

**Primary RFCD** 2805 DATA FORMAT

**Administering Organisation** Victoria University

#### Project Summary

Information and Communications Technology (ICT) has dramatically altered the world's social and economic landscape. 'From data to knowledge' is one of the priority challenges recognized by National ICT Australia. However, privacy concerns may prevent it from realization. This project aims to fulfil 'from data to knowledge' without breaching privacy of data from distributed resources held by different parties. The outcomes of this project will create new directions in the research of privacy-preserving distributed data mining and are applicable to Australian counter-terrorism and homeland defence in detecting bio-terrorism from privacy sensitive data.