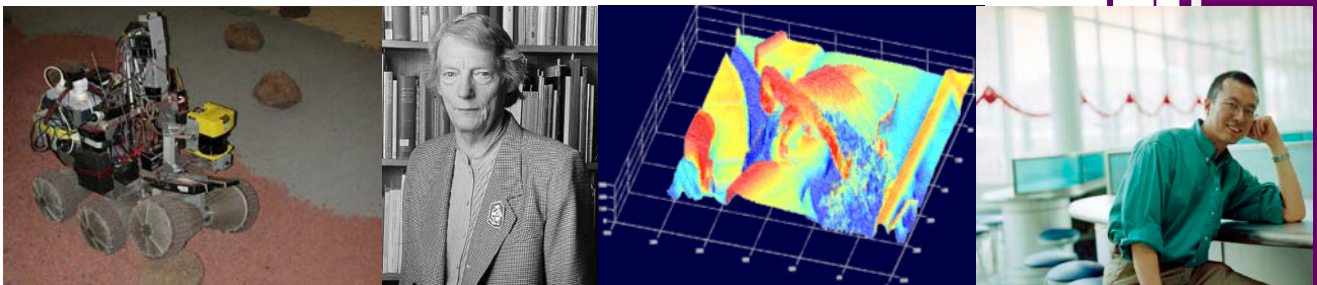


FACULTY OF INFORMATION TECHNOLOGY RESEARCH CENTRES ANNUAL REPORT 2008

This report provides an overview of the 2008 activities and achievements of the Faculty of Information Technology's Research Centres.



FACULTY OF INFORMATION TECHNOLOGY RESEARCH CENTRES

ANNUAL REPORT 2008

The Faculty's research centres experienced success in 2008, with continued growth and excellence in research and research training. This report provides details of four of the five faculty research centres in operation in 2008, including:

1. Centre for Multimedia Computing, Communications and Applications Research (MCCAR)
2. Centre for Organisational and Social Informatics (COSI)
3. Centre for Research in Intelligent Systems (CRIS)
4. Centre for Distributed Systems and Software Engineering (DSSE)

The Faculty continued to develop its research presence in 2008, with many achievements demonstrating research excellence.

2008 Key achievements:

Funding (total amount)*	Publications (total number)		Awards (total number)
ARC income: \$3,537,731	Journal papers: 104	Conference papers: 164	17
Other Competitive grants: \$1,836,800	Books: 1	Book chapters: 45	
Other: \$830, 921	Other: 10 (edited books and proceedings)		
All funding (TOTAL): \$6,205,452	All publications (TOTAL): 337		

*Members involvement in funding, not research revenue received by Faculty.

Our Centre for Research in Intelligent Systems (CRIS) was formally established at the start of the year and had great success with National Competitive grant income, with CRIS members serving as Chief Investigators on \$2.9 million of new National Competitive Grant income in 2008. The Centre grew during the year gaining more members and establishing six specialist labs and a node at the Sunway campus.

The Centre for Distributed Systems and Software Engineering (DSSE) also had a remarkable year, achieving \$1.6 million in grant funding and continuing its strong publication output with approximately 90 research papers and 25 journal publications. It was also a strong year for researchers within the Centre, with Dr Shonali Krishnaswamy receiving the 2008 Vice-Chancellor's medal for excellence in research by an early career researcher.

A busy and productive year was experienced by the Centre for Organisational and Social Informatics (COSI). The Centre produced over 70 publications, comprising five edited books, 14 book chapters, 31 journal articles and 22 conference papers. In addition to this high research output, the Centre had six PhD students and one Masters Research student graduate and was successful in obtaining in excess of \$550,000 in external research funding.

The Centre for Multimedia Computing, Communications and Applications Research (MCCAR) experienced great success, fulfilling its targets and attracting one ARC Discovery grant and one international grant during the course of the year. In the area of research training, the Centre experienced great outcomes, with 11 PhD thesis submissions, eight of which were awarded in 2008. Students of the Centre also had great individual success during the year, with two students receiving FIT Doctoral Medals, one of which also received the Mollie Holman Doctoral Medal from the Monash Research Graduate School.



CENTRE FOR DISTRIBUTED SYSTEMS AND SOFTWARE ENGINEERING (DSSE)

Director: Professor David Abramson

Deputy Director: Dr Shonali Krishnaswamy

The Centre for Distributed Systems and Software Engineering (DSSE) carries out research in foundations, methods, tools and environments for conceptualising, modelling, analysing, developing, maintaining and benchmarking large parallel, distributed and pervasive systems. DSSE aims to advance the foundations, methods and practice of distributed systems and software engineering. Its mission is to achieve internationally recognised research excellence through national and international competitive grants, high impact and quality publications, extensive international collaboration, product-oriented industry collaboration, focused research student and staff exchange and efficient and effective PhD student supervision.

DSSE witnessed a stellar year in 2008, experiencing several successes including obtaining over \$1.6 million in grant funding with the commencement of one Discovery, two Linkages and one LEIF grant. With the exception of the LEIF grant, all the other grants were led by DSSE researchers.

The Centre continued to have a strong publication output of approximately 90 research papers, including one authored book and approximately 25 journal publications. The Centre has a history of a strong cohort of students and a vibrant supervision culture. This year, as before, there were 14 HDR completions and many successes including: two IBM doctoral internships; an IBM Award at the ICSOC 2008 PhD Symposium; a best paper award at the IAENG International Conference on Data Mining and Applications (ICDMA); the Outstanding Research Contribution Award at the FIT HDR Poster Competition; and two APA scholarships awarded to students in 2008.

A key feature of DSSE's international collaborations continues to be the student exchange program with the University of California San Diego (UCSD) through the PRIME scheme. Seven students from UCSD spent eight weeks undertaking exciting research projects with Professor David Abramson. Funding was also received in 2008 to initiate the MURPA program, which allows Monash students to participate in e-research projects at UCSD. Exchange students from ENSIMAG Grenoble (France) and Lulea University (Sweden) also spent time at DSSE working on collaborative research projects.

Other notable activities in 2008 included the DSSE Industry day which was conducted in September/October 2008 to showcase and demonstrate DSSE research to invited participants from industry organisations. The event was well-attended and considerable interest was generated. Such events will continue to be run as a means of engaging with community and industry and strengthen the DSSE industry/commercialisation portfolio.

Additionally the Centre conducts an active summer/vacation scholarship program each year. In 2008, the program was conducted with four projects. This has been a very successful program in identifying potential Honours/MIT (Minor Thesis) students and introducing DSSE research to these outstanding undergraduate/postgraduate students. These projects also form an ideal platform for involving senior PhD students (whose research underpin these projects) to joint/associate supervision roles.

The establishment of the HD Seminar series (part of MURPA and Opti-Portals) by the Monash eResearch Centre and the Message Lab at Caulfield and Clayton boosted research collaboration during the year. Led by Professor David Abramson, the Science Director of the Monash e-Research Centre, DSSE research will continue to play a significant role in e-Research leadership at Monash University.

DSSE's current structure consists of two labs - the Message Lab and the Mobility Lab. However, there is ongoing discussion in DSSE around the emergence of a third lab/special interest group that leverages research strength in the data management/security areas.

Awards:

- Vice-Chancellor's medal for excellence in research by an Early Career Researcher - Dr Shonali Krishnaswamy
- IBM Innovation Award - Dr Shonali Krishnaswamy and Associate Professor John Hurst
- ARC Australian Post Doctoral Fellowship - Dr Mohamed Gaber
- Associate Professor David Taniar was awarded the Best Journal Paper Award announced in September 2008 by IGI Global as part of the 2007 Excellence in Research Awards
- Associate Professor Zaslavsky, Dr Krishnaswamy and Dr Gaber were successful in being funded by the Go8-German Collaboration Scheme for a joint project with the Technical University of Berlin.

Grants:

National/International competitive grant income awarded for commencement in 2008:				
Grant	2008 (\$)	2009 (\$)	2010 (\$)	2011 (\$)
<i>ARC Discovery:</i> Adaptive data stream processing in heterogeneous distributed computing environments using real-time context <i>Investigators:</i> Associate Professor Arkady Zaslavsky; Dr Shonali Krishnaswamy; Dr Mohamed Gaber.	105,000	105,000	105,000	
<i>ARC Linkage:</i> A scalable debugging framework for petascale computers <i>Investigators:</i> Professor David Abramson; Dr L DeRose; Mr R Moench	59,631	116,762	105,131	48,000
<i>ARC Linkage:</i> A high throughput Grid based environment for real time bio-medical imaging <i>Investigators:</i> Professor David Abramson; Dr M Lackmann; Dr M Haase; Dr IS Harper; Dr S Scheck	190,000	190,000	190,000	
<i>ARC Linkage - Infrastructure:</i> Australian High Performance Computational Structural Biology Facility <i>Investigators:</i> Dr A Buckle; Dr JC Whisstock; A/Prof MC Wilce; Prof IA Smith; Dr SP Bottomley; Professor David Abramson; Professor Geoff Webb; Associate Professor Maria Garcia de la Banda; Prof WF Appelbe; Prof RL Coppel <i>(Also reported by CRIS)</i>	400,000			
IBM Innovation Award (Unstructured Information Management Architecture (UIMA): Enabling a Scalable and Intelligent Distributed Repository of Learning Objects <i>Investigators:</i> Dr Shonali Krishnaswamy and Associate Professor John Hurst	25,000			

National/International competitive grant income awarded in 2008 for commencement in 2009:			
Grant	2009 (\$)	2010 (\$)	2011 (\$)
<i>ARC Discovery: Mobile Query Processing: An Integrated Approach</i> Investigators: Dr David Taniar and Professor Bala Srinivasan	60,000	50,000	70,000
Other grant income awarded in 2008 for commencement in 2009:			
Grant	2009 (\$)	2010 (\$)	2011 (\$)
Context-Aware Smart Robots for Ambient Assisted Living Environments Group of Eight – Germany Joint Research Co-operation Scheme (Monash University - Technical University of Berlin) Investigators: Associate Professor Arkady Zaslavsky, Dr Shonali Krishnaswamy and Dr Mohamed Gaber	20,000	20,000	
Monash International Science Initiatives (ISI): MURPA Program Investigators: Professor David Abramson	20,000		
Development of Sharable and Longitudinal Medical Records for e-Health in Indonesia using an Australian-based OpenEHR Standards, The Australian-Indonesian Governance Research Partnership (AIGRP) Investigators: Associate Professor David Taniar, Tati Mengko, Andriyan Bayu Suksmo, Wenny Rahayu, Heather Grain, Eric Pardede	60,000		
High Performance Parallel Processing for Semantic Grid, Japan Bilateral Exchange Program - Scientific Visit to Japan 2009-2010, Australian Academy of Science AAS-JSPS Bilateral Program Investigators: Associate Professor David Taniar	^^		

^^ Support for a one-month research visit to Japan



CENTRE FOR ORGANISATIONAL AND SOCIAL INFORMATICS (COSI)

Director: Professor Sue McKemmish

Deputy Director: Associate Professor Julie Fisher

The Centre for Organisational and Social Informatics (COSI) had a very busy and successful 2008. As detailed within this section, the centre have been successful in attracting more than \$550,000 in research funding from the Australian Research Council (ARC), have had six PhD students and one Masters research student graduate, and have had more than 70 books, book chapters and papers published, consisting of: five edited books; 14 Book chapters; 31 Journal articles; and 22 Conference papers. Eight PhD graduations and one Masters by Research student graduated during the course of the year.

Members of COSI were successful in obtaining in excess of \$550,000 in external research funding during 2008 including one ARC Discovery Indigenous Researchers Development, two ARC Linkage grants and an Australian Learning and Teaching Council grant. The year also saw the awarding of the first three research grants from the Jean Whyte Fund. The first recipients of the Jean Whyte Fund were:

- Tom Denison (PhD candidate), Associate Professor Graeme Johanson (Mentor) - Libraries engaging communities: shared collection building using Web 2 technologies (\$19,116).
- Professor Eric Ketelaar, Dr Livia Iacovino - Rethinking archival and legal frameworks for records of Indigenous Australian communities of memory: a participatory model of rights and responsibilities (\$11,975).
- Jozefina Deserno, (PhD candidate) - Corporate social transparency and recordkeeping: the evidence base for sustainability reporting (\$3,975).

The COSI retreat for 2008 focused on developing research platforms and clarifying proposed areas of research strength. Four potential platform research foci for COSI were proposed:

1. Education and ICT – encompassing research in education specifically in relation to teaching about and with technology;
2. Community Centred IMS – focus is on research on the use of technology in communities;
3. Business/community Information Systems Design & Development – specific focus on people and technology in organisations and research to improve how people and organisations’ needs can be better met in developing systems; and
4. Information Services for the Expert Consumer – this research is focused on developing information services for consumers and helping with organisation and retrieval of information.

A forum, *'IT for Social Inclusion: Research Problems and the Big Question'*, facilitated by Professor Eric Ketelaar, was held in August, involving a panel of representatives from different communities reflecting on their experience of community-centred research. The forum also provided a platform for discussion of a number of issues relating to: Community research frameworks and traditions ; Participatory models of research agenda setting and governance; Building research partnerships with communities; Negotiating mutual rights in research data; Protocols and ethics; and the transformative nature of community-centred research. .

The Centre also hosted a number of overseas visitors of high standing in our community, who presented seminars and ran workshops during their visits. COSI introduced a formal program of events to support the Centre's HDR students and foster a sense of community amongst the students. Lastly the Centre's website underwent a major revamp and update with all information about COSI and its' research now included.

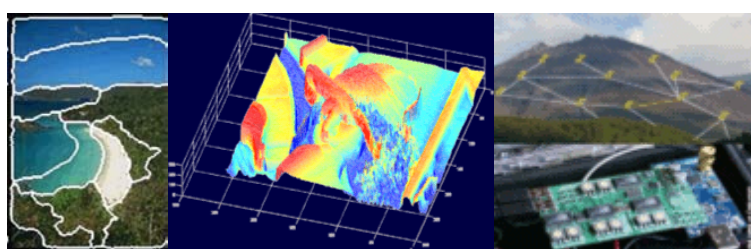
Awards:

- Roongrasamee Boondao is an Endeavour Award scholarship holder, awarded by the Australian Government Department of Education, Employment and Workplace Relations (DEEWR).
- Dr Gillian Oliver won a Literati Network Award for Excellence 2008 sponsored by the UK Emerald Group Publishing Limited, which publishes leading journals in the Information Management and Science fields.

Grants

Name	Industry Partners	Funding (\$)	Year/s
ARC Discovery Indigenous Researchers Development: Koorie Archiving Investigators: Dr Shannon Faulkhead; Professor LW Russell; Professor Sue McKemmish		190,000	2009-10
ARC Linkage: Digital Divas: Designing approaches to enthuse girls' interest in ICT studies and ICT careers Investigators: Associate Professor Julie Fisher; Dr C Lang; Associate Professor HJ Forgasz; Mrs A Craig; Ms RT Ellul; Ms B Harlos	<ul style="list-style-type: none"> • ACS • Vic ICT for Women • DEECD • Netspace • Brentwood SC 	396,000 (286,000 ARC, 110,000 industry partner contribution)	2009-11
ARC Linkage: Enhancing Patient Management at the Point of Care Using Electronic-Based Clinical Pathways Investigators: Dr Linda Dawson; Dr VM Plummer; Associate Professor Fisher; Dr AP Howard; Mr RM Ribbons; Mrs TM Harlem	<ul style="list-style-type: none"> • NEC • PMP 	116,000 (81,000 ARC 35,000 industry partner contribution)	2009-10

Other Funded Research			
Name	Type of Grant	Funding	Year/s
Changing the Culture of Teaching and Learning in ICT and Engineering (led by QUT) <i>Investigators:</i> Associate Professor John Hurst, Dr Judy Sheard	Australian Learning and Teaching Council	\$216,421	2008-10
Investigating the effectiveness of Networks for Women in ICT. <i>Investigators:</i> Associate Professor Julie Fisher	Research	\$7,500	2008
Studies into the Chinese in Prato <i>Investigators:</i> Associate Professor Graeme Johanson	International Strategic Initiatives Fund from the Office of the DVC (International)	\$42,000	2008
Protocols for ensuring participation by all stakeholders in e-Research repositories, and encouraging the articulation of their many interests in e-Repositories. <i>Investigators:</i> Associate Professor Graeme Johanson	Monash e-Research Repository	\$21,000	2008



CENTRE FOR MULTIMEDIA COMPUTING, COMMUNICATIONS AND APPLICATIONS RESEARCH (MCCAR)

Director: Professor Guojun Lu

Senior Deputy Director: Dr Joarder Kamruzzaman

MCCAR includes research in medical image processing, digital library, remote surveillance, network resource management, mobile communications, emerging technologies such as wireless sensor and mesh networks and innovative applications in learning, business, games, archaeology and art. MCCAR conducts research in three main areas: Multimedia Signal Processing and Management; Multimedia Communication and Sensor Networks; and Innovative Multimedia Applications.

The centre was successful in fulfilling its target and continued to grow in 2008. Quality journal publications increased in 2008 and per capita journal publication were very good. One conference paper was awarded the runner-up Best Paper award in a prestigious conference. The centre also continued to run its weekly seminar series which has proven very useful and also ran a successful workshop resulting in collaborative research initiatives with the Faculty of Medicine. These initiatives were expected to grow further in 2009.

The Centre enjoyed success in the area of research training, with 11 PhD thesis submissions. Out of this number, eight were awarded degree in 2008 and the rest were under examination. The quality of PhD theses was high with Ferdous Ahmed Sohel awarded the Mollie Holman Doctoral Medal by MRGS and the FIT Doctoral Medal, and Iftekhar Ahmad awarded FIT Doctoral Medal 2007, announced in 2008. Additionally, HDR student numbers in the centre continued to grow with fourteen new students recruited in the 2008 scholarship round.



MCCAR and Monash University Gippsland sponsored the 3rd International Conference on Pattern Recognition in Bioinformatics (PRIB 2008) held in Melbourne, October 15-17, 2008. In addition, MCCAR organised a full day workshop on research collaboration and research training on December 4, 2008. Researchers from other centres and the faculty were invited as speakers. The success of the workshop led to collaborative research projects being initiated with the Faculty of Medicine.

Grants

- MCCAR was successful in attracting an ARC discovery grant in 2008. In total, members submitted seven DP applications, of which one was successful.
- Professor Guojun Lu, Associate Professor Kai Ming Ting and Dr Dengsheng Zhang were awarded an ARC discovery grant of \$250,000 for their project, “*Automatic music feature extraction, classification and annotation*” to be funded during 2009-11.
- Associate Professor Kai Ming Ting was awarded \$60,000 for his project “*Adaptive Anomaly Detection using Isolation Forest*” by the United States Air Force-AOARD to be funded during 2009-10.

Achievements by members

- Professor Guojun Lu was awarded Gippsland Campus Research Award, 2008 for his best research performance in Monash Gippsland among all schools.
- Dr Madhu Chetty was the general chair of the third International Conference on Pattern Recognition in Bioinformatics (PRIB 2008).
- Dr Gour Karmakar edited a reference book ‘*Advanced Multimedia Communication*’, published by Information Science Reference, New York, USA.
- Dr Joarder Kamruzzaman was nominated for MPA supervisor of the Year Award
- Tony Liu, KM Ting, and Zhi-hua (Nanjing, China) were awarded the Runner-up Best Paper award in the prestigious International Conference on Data Mining, 2008



CENTRE FOR RESEARCH IN INTELLIGENT SYSTEMS (CRIS)

Director: Professor Geoff Webb

Deputy Directors: Professor Ray Jarvis, Professor Mark Wallace

Research in Intelligent Systems improves the intelligence of computational systems and processes, including both artificial and natural computation. This research area has long been one of Monash University's strengths. The introduction of the Centre in 2007 has enhanced collaboration between Intelligent Systems researchers from across the University, serving as a conduit for establishing collaborations with other disciplines and providing a structure for developing external collaborations.

The Centre continued to grow and was formally established early in 2008, then launched mid-year. In particular, membership grew to 28 full members, all of whom have been recipients of national competitive grants. Associate membership grew to 18. Membership spans the Faculties of: Information Technology; Engineering; Medicine, Nursing and Health Sciences; Arts; and Business and Economics, as well as encompassing the Clayton, Caulfield, Gippsland and Sunway campuses. During the year, the Centre developed an industry engagement plan.

Research income continued to grow, with CRIS members being Chief Investigators on \$2.9 million of new National Competitive Grant income. There was also pleasing growth in research income from other sources, with members receiving \$400,000 of new industry research income. Looking toward substantial growth in research income to support growing research programs, CRIS continued working towards greater engagement with NICTA and preparing for potential ARC Centre of Excellence and Cooperative Research Centre funding.

Labs and Nodes

The creation of six labs within the centre has had a number of benefits, including bringing related researchers together and providing a structure by which external parties can gain an overview of the centre's areas of research. The six labs and node at the Sunway campus are as follows:

1. Adaptive Diagrams and Documents
2. Computer Vision and Robotics Laboratory
3. Knowledge Discovery (KD)
4. Optimisation of travel, transport and logistics
5. Natural Computation Lab
6. User modeling and Natural language processing (UMNL)
7. Sunway Campus Node: comprises of three key research strength areas within intelligent systems: *Intelligent Robotics and Smart Device Ecologies*; *Intelligent Distributed and Multimedia Systems*; and *Data Mining and Knowledge Management*

The Centre continued its successful research seminar series at Clayton, and launched a seminar series at Sunway. This was augmented by a student run PhD lunch series in which PhD students created a lively weekly student-centric informal seminar series.

Also during the course of the year, CRIS hosted the *IEEE International Conference on Service System and Service Management*, bid successfully to host the *Australian Artificial Intelligence Conference* in 2009 and started preparing a bid to host the prestigious *International Joint Conference on Artificial intelligence* in 2013.

Performance targets

The following table presents the Centre's performance against its targets for 2008. While it was disappointing that the Centre was not able to meet its 2008 targets for industry funding or IITB PhD supervisions, it is expected that this will change in 2009 and there will be demonstrated improvement.

Category	Target	Outcome
Value of new National Competitive Grants	\$1.5 million	✓\$1.6 million where member is lead CI, \$0.4 million where member is other CI
RQF outcome	5 star rating	n/a
Value of new Industry Funding	\$400,000	none
Indian Institute of Technology Bombay PhD supervisions	5	0
New strategic international partnerships	1	0
Operational Plan	Complete Op plan	✓

Grants

National competitive grant income awarded in 2008, where member is lead CI:				
Description	2009 (\$'000)	2010 (\$'000)	2011 (\$'000)	2012 (\$'000)
D Green , H Abbass, Dual phase evolution in networks	160	90	110	
D Taniar ; B Srinivasan, Mobile Query Processing: An Integrated Approach	60	50	70	
K Marriott , P. Stuckey and B. Bos. Supporting adaptive, interactive documents.	175	170	170	
J Hohwy , TJ Bayne, Conscious states in conscious creatures: A philosophical framework for the science of consciousness	78	79	90	
J Song NHMRC Peter Doherty Fellowship	68	68	68	68
TOTAL	541	457	508	68
National competitive grant income awarded in 2008, where member is other CI:				
Description	2009 (\$'000)	2010 (\$'000)	2011 (\$'000)	2012 (\$'000)
G Lu; K Ting ; D Zhang, Automatic music feature extraction, classification and annotation	100	70	80	
P Gerrans; J Hohwy , A model of the mind which explains the role of emotions in normal cognition and affective disorder	56	36	71	
TOTAL	156	106	151	

Other Grant income awarded in 2008:		
Scheme description	2009 \$,000	Grant Total \$,000
KM Ting , Adaptive Anomaly Detection using Isolation Forest, AOARD Grant	60	
Monash University Strategic Initiative Grant, Y Cheung, H Scheepers, V Lee social network theory and collaborative enterprise systems	10	

Research income 2008:			
Description	NGCP Member is Lead CI \$,000	NGCP Member is Other CI \$,000	Other \$,000
MG Wallace; GI Webb; NL Boland; IR Evans; H Gu; Methods and software for efficiently solving the transportation crewing problem	120		80
I Zukerman; Y Marom; Sentiment detection from opinion surveys - the quest for customer and employee satisfaction	42		
B Meyer; A Dussutour; DG Green, Adaptiveness of self organised decision making, ARC Discovery	100		
D Suter; A Bab-Hadiashar, Statistical Methods of Model Fitting and Segmentation in Computer Vision, ARC Discovery	135		
RA Jarvis; I Zukerman; J Alexandersson; Y Shirai. Multi sensory Fusion and Understanding in Robotic Assistive Technology Environments, ARC Discovery	110		
JP McCormack, Computational Creativity: an evolutionary ecosystem approach	70		
MG Wallace; MJ Garcia de la Banda, Analysing model transformations for combinatorial problems, ARC Discovery	80		
D. Green, Emergence of robust, stable structures via computation within natural networks, ARC Discovery	166		
GI Webb, Discovering justified knowledge from data, ARC Discovery	124		
Georgeff, Campbell, Schmidt, Thompson & Webb, Intelligent Collaborative Care Management, ARC Linkage	160		85
JP McCormack, A Dorin & TC Innocent, Design after Nature: Generative Models for Digital Media, ARC Discovery	72		
Lee, Tsoi - ARC Discovery Grant	135		
Y. Yang, Learning Semi-Naïve Bayesian Classifiers from Numeric Data,	62		
T. Dwyer, Constrained numerical optimisation techniques for automatic graph drawing, ARC Discovery	59		
R. Jarvis, Robotic Vehicles for Fire Fighting and Emergency Services Support (with Vic. Country Fire Authority) ARC Linkage	99		
R. Jarvis, Robotic Inspection and Safe Removal of Suspicious/Abandoned Luggage (with iOmniscient - partner contributions not shown.) ARC Linkage	28		
S. Sadedin, Simulation studies of gene flow and genetic diversity in heterogeneous landscapes, ARC Discovery Project	85		
M Wallace, N Boland, From tactical planning to operations control - bridging the chasm ARC, Linkage. Industry Partner: Constraint Technologies International	125		60
A. Paplinski, B. Srinivasan, Esson, Fruit shape estimation from stereoscopic images in real time, ARC Linkage	36		
K. Marriott, B. Meyer, Stuckey, Supporting Adaptive Diagrammatic Communication, ARC Discovery	250		
JC Whisstock; MC Wilce; IA Smith; SP Bottomley; DA Abramson; GI Webb; MJ Garcia de la Banda; WF Appelbe; RL Coppel; Australian High Performance Computational Structural Biology Facility (Also reported by DSSE)		400	
Baldwin, Zukerman et al Personalised Content Delivery for Assisted Navigation of Information Rich, Physical Environments such as a Museum, ARC Discovery (Melbourne University)		110	
Prof Peter Cameron et al inc M Georgeff Using data to improve quality of health care NHMRC Health Services Research grant		525.8	
L Churilov; GI Webb; Dr D Neiger, Integrated Intelligent Decision		85.1	

Support for Field Design and Management of Census Operations in Australia, ARC Linkage			
Dewar, Green , et al Complex Open Systems Network, ARC Networks,		300	
Mendis, Green , et al. Research Network for Secure Australia, ARC Networks.		390	
Whisstock, Bird, Bottomley, Mackie Pike, Buckle, Scott, Garcia de la Banda , Grigoriev. Proteases, their inhibitors, and receptors in degenerative disease, NH&MRC program		1311	
Marriott , NICTA fellowship with M Wallace		40	
A.B. Hadiashar, R. Hoseinnezhad, D. Suter , Data Fusion Techniques for Electro-Mechanical Braking Systems, ARC Linkage		34	
B Shirinzadeh, AE Nicholson , MH Ang. Autonomous Service Robots in a Multi-Agent Based System for Household and Industrial Environments. ARC, Linkage.		55	
K Korb , Visiting Fellowship, Tilburg			5
M Wallace , NICTA fellowship			80
Total Research Income 2008	2058	3625	310

Glossary of Abbreviations

ADR	Associate Dean Research
ARC	Australian Research Council: the ARC funds research and researchers via the National Competitive Grants Program (NCGP).
AOARD	Asian Office of Aerospace Research and Development
APA	Australian Postgraduate Award
A/Prof	Associate Professor
COSI	Centre for Organisational and Social Informatics
CRC	Cooperative Research Centre
CRIS	Centre for Research in Intelligent Systems
DEEWR	Department of Education, Employment and Workplace Relations
DP	(ARC) Discovery Project: funds individual researchers and projects.
DSSE	Centre for Distributed Systems and Software Engineering
ECR	Early Career Researchers
FIT	Faculty of Information Technology
HDR	Higher Degrees by Research
ICSOC	International Conference on Service Oriented Computing
ICT	Information and Communication Technology
IBM	International Business Machines
IEEE	Institute of Electrical and Electronics Engineers
IITB	Indian Institute of Technology in Bombay
IMS	Information Management Skills
KD	Knowledge Discovery
LEIF	Linkage Infrastructure Equipment and Facilities
LP	(ARC) Linkage Project: funds partnerships between researchers and industry, government and community organisations as well as the international community.
MCCAR	Centre for Multimedia Computing, Communications and Applications Research
MURPA	Monash Undergraduate Research Projects Abroad
NGCP	National Competitive Grants Program
NICTA	National ICT Australia
PhD	Doctor of Philosophy
PRIB	International Conference on Pattern Recognition in Bioinformatics
PRIME	Pacific Rim Undergraduate Experiences
Prof	Professor
RQF	Research Quality Framework: previous DEST initiative for an improved assessment of the quality and impact of publicly funded research and an effective process to achieve this.
UCSD	University of California San Diego
UMNL	User Modelling and Natural Language processing