

## Faculty of Computing Health and Science

### Research Unit Annual Report

**RESEARCH UNIT NAME:** ehealth

**RESEARCH UNIT LEVEL (tick):**

- X Level I Research Group       Level II Research Centre  
 Level III Research Institute       Centre of Excellence

**YEAR:** 2010

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**BRIEF OVERVIEW** (1-2 paragraphs outlining major activities conducted in past year)

#### **WA context**

In WA the past 18 months have been particularly uncertain in respect of obtaining research opportunities. Following the resignation of Peter Flett (Director General DOHA), the CIO Richard McFadden also left. During this time there were effectively no opportunities for gaining the ear of these people with a blanket 3% cut-back on all expenditure and with consultant contracts not being renewed. Kim Snowball now has had his appointment confirmed and is in the process of assessing the Department. It may still be some time before funds/opportunities become available under the new regime and anyway there is no guarantee that there will be. Also, WA is not particularly seen as a leader in ehealth by the rest of Australia.

However, individuals in the group have made some progress in trying to establish links with other universities, research institutes such as the Lyon's Institute and in building relationships outside of WA (particularly in Canberra, Melbourne and Brisbane where health decisions and funding occur). The engagement section below provides evidence of the contacts being established and the progress being made. Further, two ARC grants were prepared but at the last minute the main sponsor backed out so only one went forward, the result of which is expected in May 2011. The ARC Linkage Grant title is 'Using Web 2.0 social media strategies to break up sedentary time and promote physical activity for deskbound office workers.'

**MEMBERSHIP** (Full Title of Researchers, including staff, research students, adjuncts in the past year)

Associate Professor Philip HINGSTON  
Associate Professor Stanislaw MAJ  
Associate Professor Donald McDERMID  
Doctor Leesa COSTELLO  
Doctor Martin MASEK  
Doctor David VEAL  
Doctor Trish WILLIAMS

**NEW GRANTS** (Identify Funding Body, Value of grant, Years funded, Chief Investigator, collaborators, title)

Healthway grant: Promoting youth mental health using gaming technology: An RCT pilot study, J. Dooley, M. Masek, P. Hingston, \$29072

**PUBLICATIONS, REFERRED BOOKS, CHAPTERS, JOURNAL ARTICLES, CONFERENCE PAPERS, REPORTS**

McDermid, D. C., Kristjanson, L. and Spry, N. (2010). "Factors affecting the sustainability of Information Systems: Embedding new technology in hospitals", *The International Journal of Healthcare Information Systems and Informatics*, Vol. 5, No. 1, pp 1-15.

McDermid, D.C., Mahncke, R. J., and Williams, P. H. (2010). An Information Security Governance Framework for Australian Primary Care Health Providers, in C. Bolan (Ed) *Proceedings of the 8th Australian Information Security Management Conference*, p 62 -68. Edith Cowan University, Perth, WA

McDermid, D.C., Mahncke, R. J., and Williams, P. H. (2010). An Information Security Governance Encounter for Australian Primary Care Health Providers, In Hamid Arabnia, Kevin Daimi, Michael R. Grimaila, George Markowsky, Selim Aissi, Victor A. Clincy, Leonidas Deligiannidis, Donara Gabrielyan, Gevorg Margarov, Ashu M. G. Solo, Craig Valli, Patricia A. H. Williams (Eds.), *Proceedings of the 2010 International Conference on Security & Management, SAM 2010*, pp 637-643, Las Vegas, Nevada, USA

Patel, N. & Williams, P. A. H. (2010). Breaches in medical information security: The problem of reporting. In H. R. Arabnia, K. Daimi, M. R. Grimaila, G. Markowsky, S. Aissi, V. A. Clincy, L. Deligiannidis, D. Gabrielyan, G. Margarov, A. M. G. Solo, C. Valli, P. A. H. Williams (Eds.) *Proceedings of the 2010 International Conference on Security & Management, SAM 2010*, July 12-15, 2010, Las Vegas Nevada, USA, Vol. 2, pp. 633-636. USA: CSREA Press.

Sinclair, J., Hingston, P., Masek, M. and Nosaka, K., "Testing an Exergame for Effectiveness and Attractiveness", *IEEE Games Innovation Conference*, Hong Kong, December, 2010.

Veal, D & Maj S. (2010) A Graphical User Interface for the Blind – an Evaluation, *Modern Applied Science*, Vol 4, No 12,

Veal, D & Maj S. (2011) A low cost adaptive graphical user interface for the visually handicapped with multiple conditions *Scientific Research and Essays* Vol. 6(1), pp. 162-167, 4 January, 2011

Williams, P.A.H. (2010). Is cyber resilience in medical practice security achievable? In C. Valli (Ed.) *Proceedings of the International Cyber Resilience Conference*. pp. 105-111. Perth: Secau-Security Research Centre, Edith Cowan University

Williams, P. A. H. (2010). Medical Information Security: Is it all too hard? In H. R. Arabnia, K. Daimi, M. R. Grimaila, G. Markowsky, S. Aissi, V. A. Clincy, L. Deligiannidis, D. Gabrielyan, G. Margarov, A. M. G. Solo, C. Valli, P. A. H. Williams (Eds.) *Proceedings of the 2010 International Conference on Security & Management, SAM 2010*, July 12-15, 2010, Las Vegas Nevada, USA, Vol. 2, pp. 644-650. USA: CSREA Press.

Williams, P. A. H. (2010) An ill-defined problem – effective biomedical informatics curriculum? In D. Hansen, L. Schaper, & D. Rowlands, (Eds.), *Proceedings of the HIC2010 Informing the Business of Health Care, International Conference*, pp. 101-108. Health Informatics Society of Australia Ltd, Sydney, Australia.

Williams, P.A.H. (2010). Improving Medical Information Security using Contextualization Models. In A. Ware (Ed.), *Annual International Conference on Infocomm Technologies in Competitive Strategies (ICT 2010)*, pp.65-68. Singapore, Global Science and Technology Forum (GSTF).

Williams, P.A.H. (2010). Trust: An overlooked information security vulnerability?. *Connect Newsletter for Mental Health Informatics Special Interest Group, Royal College of Psychiatrists, UK*, 17(1), 5-6.

Williams, P.A.H. (2010). Royal Australian College of General Practitioners, *Computer Security Guidelines (3<sup>rd</sup> edition)*. South Melbourne: RACGP

**HIGHER DEGREE BY RESEARCH LOAD** (list name of candidate and degree type)

James AMI-NARH (DIT)  
KYAW Htat Htat (DIT)  
Rachel MAHNCKE (PhD)  
Jeff SINCLAIR, DIT  
Darren WEBB (PhD)

**HIGHER DEGREE BY RESEARCH COMPLETIONS** (List name, degree, title of thesis)

None

**VISITORS AND COLLABORATIONS** (List the organisation's name and short summary of the nature of the collaboration. Separate into local, national and international)

None

**COMMUNITY ENGAGEMENT ACTIVITIES AND LINKAGES** (Provide a brief overview of any significant activity)

1. Health Informatics Society of Australia, WA Branch Committee Members (McDermid and Williams)
2. HITWA 2010, Conference Committee (Williams and McDermid)
3. HITWA 2010, Website coordinator (McDermid)
4. Meeting with RACGP, Leederville re NEHTA developments (McDermid)
5. Meeting with HBF re ARC grant application (McDermid)
6. Meeting with Lyon's Institute re potential grant applications (Veal and McDermid)
7. Meeting Yogi of the CSIRO who is also now a DPS project team member and representatives of SICK. (Veal and Maj)
8. Meetings with on sellers for equipment for optical cables. PCs and Routers and Switches as part of the player recognition project. (Veal and Maj)
9. Five meetings with Dr Ian Murray of the Rehabilitation Engineering & Assistive Technology Research Laboratory at Curtin University of the as part of the Dynamic Patterning System (DPS) for the blind and deaf blind electronic text conversion into patterns GUI project. Ian is also a DPS project member. (Veal and Maj)
10. Four meetings and a presentation with a partner for an ARC linkage grant Senses at their HQ. Senses is the organisation for the Deaf Blind in WA and they area partner organisation for the DPS project. (Veal and Maj)
11. Three meetings including a presentation to the Association for the Blind WA who are also a partner organisation for an ARC linkage grant (Veal and Maj)
12. Two meetings with and a presentation to Professor Craig Spellman Head of the School of Psychology and Social Science e at ECU and also DPS project team member. He has expertise in human pattern recognition and memory. (Veal and Maj)
13. eHeath conference at CSIRO in Perth. (Veal)
14. Lots of communication with staff at ABLE the deaf blind organisation for Victoria and Tasmania about the DPS project but they finally decided not to join. (Veal)
15. Appointed WorldComp'10 - 2010 World Congress in Computer Science, Computer Engineering, and Applied Computing, Conference Chair for Medical Information Security stream and associate editor of SAM'10 - 2010 International Conference on Security and Management. (Williams)
16. Appointed Chair of SECAU Congress, Information Warfare Conference for 2010.
17. Key note speaker at the 20th Royal Australian College of Dental Surgeons Convocation, Perth, 11-14<sup>th</sup> March 2010 (Williams)
18. Invited & attended National E-Health Transition Authority (NEHTA) Health Informatics Workforce Planning and the Up-skilling of Health Workers for E-Health Workshop in conjunction with Health Workforce Australia (HWA), Australian Institute of Health and Welfare (AIHW), Australian Commission on Safety and Quality in Health Care (ACSQHC), and National Health and Medical Research Council (NHMRC) to help create 2 government plans. 4<sup>th</sup> May 2010. (Williams)

19. Trish Invited to write an editorial Mental Health Informatics Special Interest Group (Royal College of Psychiatrists, UK) on “Trust: An overlooked information security vulnerability?” (Williams)
20. Trish invited to edit and revise new Royal Australian College of General Practitioners, Security Standards and Guidelines to be released/launched in October, 2010 (Williams)
21. Consulted to RACGP on V3 National Security Guidelines and invited to RACGP GP10 conference to launch of new Security guidelines (Williams)
22. Invited to address Data Governance Council in Canberra.
23. Presented November meeting of ACS Women in IT on “Leadership in Medical Information Security” (Williams)
24. Invited to comment on National E-Health Transition Authority’s, Security Access Framework (SAF) for Australia. (Williams)
25. Invited to speak at Australian Association of Practice Managers National Conference in October, 2011. (Williams)
26. Selected for Australian Delegation for Standards Australia at HL7 International Meeting in January 2011. (Williams)

#### **FUTURE PLANS AND DIRECTION** (Provide an overview)

Currently, the group is operating at two levels. At an operational level research in any aspect of ehealth is being encouraged in the hope that this will result in long term sustainable strength. In parallel with this and in conjunction with the School, areas of potential long term strength are being examined with a view to these being nurtured and promoted as strengths in the future.

Two possible sustainable areas are Supporting General Practitioners and research for the blind.

#### **Supporting General Practitioners**

Consolidate connections and relationships over East, obtain invitations to work on committees over East, obtain funding to go East where the funding decisions are made.

#### **Research for the Blind**

Try to obtain a grants to develop and investigate the use of a newer version of the DPS for the blind and deafblind. It is intended to apply for and ARC linkage grant for this project. We have also been looking into the use of a modified version the DPS in the area of Dyslexia. We have obtained a Morse code key to input text directly into common PCs and internetworking devices and other applications such as standard text. This key also inputs into the DPS. This is for potential use by the disabled where on off is the only visible means of accessing computers.

#### **DATE OF NEXT FORMAL REVIEW**

December 2011