

## Faculty of Computing Health and Science

### Research Unit Annual Report

**RESEARCH UNIT NAME:**

**RESEARCH UNIT LEVEL (tick):**

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

**YEAR:**

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

The vision of ParkC is better to understand Parkinson's disease (PD) such that we can significantly improve the life of people with Parkinson's and their carers, through research and education in the search for a cure.

We have identified a niche area of research that takes advantage of the unique resources and expertise available to us in WA; namely the translation of laboratory research to the clinic. Our research is focused on developing three interconnected streams of research:

1. Development of restorative/neuroprotective treatments and delivery systems;
2. Establishment of a better understanding of the heterogeneous nature and progression of the condition so that future treatments are targeted towards those that would benefit the most;
3. Non-pharmaceutical interventions that will reduce the impact of Parkinson's symptoms and improve the rehabilitation of people with Parkinson's following current and future surgical interventions

Community engagement is a particular strength of ParkC's and, in 2010, we continued to foster and extend our community relationships.

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

ParkC Scientific Steering Committee:

- Dr Meghan Thomas (Coordinator, ParkC, ECU)
- Dr Romola Bucks (Lecturer, School of Psychology, UWA)
- Dr Andrea Loftus (Lecturer, School of Psychology, UWA)
- Dr Natalie Gasson (Senior Lecturer, School of Psychology and Speech Pathology, Curtin University of Technology)
- Dr Roger Barker (University Reader in Clinical Neuroscience, Cambridge University, UK/Honorary Consultant in Neurology, Addenbrooke's Hospital, Cambridge UK)
- Dr Prue Cormie (Postdoctoral Research Fellow, Vario Institute, ECU)
- Ms Janet McLeod (PD nurse specialist, Parkinson's Association WA)
- Mrs Pam van Omme (Carer of a person with PD)
- Ms Karen Rowland (Person with PD)
- Mr Don Capel (Person with PD)

**ParkC Staff:**

- Dr Kate Cruise (Postdoctoral Research Fellow, ParkC, ECU). Returned from maternity leave part-time.
- Ms Maria Kroczek (Research Assistant)

**ParkC ECU Students:**

- Maria Albertsen (PhD, Human Biology)
- Tiza Chipungu (Honours, Human Biology)
- Roger Pegoraro (PhD, Sports Science)

**UWA Students:**

- Mark Lam (Masters of Medical Science, School of Surgery)
- Michelle Hodge (Honours Psychology)
- Caitlin Harwood (Honours Psychology)
- Adam Wang (Honours Psychology)
- Lauren Mohr (Honours Psychology)
- Maria Kroczeck (PhD Psychology)
- Michelle Marneweck (PhD Psychology)
- Li-Ann Leow (PhD Psychology)
- Dianne Harvey (Doctor of Psychology (Clinical) Psychology)
- Karen Brooker (Doctor of Psychology (Clinical) Psychology)

**Curtin School of Psychology Students:**

- Lauren Mohr (Bachelor of Psychology, Honours)

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

<b>Year/\$</b>	<b>Funding Body/Grant Type</b>	<b>Title</b>	<b>Applicant(s)</b>
2010: \$2,000	Parkinson's Association of WA	Dr Roger Barker to visit ECU	Meghan Thomas
2010: \$5,000	ECU Visiting Research Fellow	Dr Roger Barker to visit ECU	Meghan Thomas, Mel Ziman
2010: \$5,000	Parkinson's Association of WA	Sleep and Cognition	Andrea Loftus, Romola Bucks & Maria Kroczeck

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

Published manuscripts:

Meghan G Thomas, Lauren Evill, Syerna Ong, Leah Stone, Mel Ziman, Livia Hool. (2010). Defining the neuronal capacity of bone marrow stromal cells using an amalgamated in vitro method. *Translational Research*. 157(2):56-63. (Impact Factor = 1.984).

Cruise, K.E., Bucks, R.S., Loftus, A.M., Newton, R.U., Pegoraro, R., & Thomas, M.G. (2010). Exercise and Parkinson's: benefits for cognition and quality of life. *Acta Neurologica Scand.* 123: 13-19 (Impact Factor = 3.207, ERA=B).

Bucks, R.S\*, Cruise, K.E\*, Barker, R.A., Loftus, A.M., Thomas, M.G. (2010). Do Coping Processes Influence Quality of Life in Parkinson's disease? *International Journal of Geriatric Psychiatry.* 26:247-255 (Impact Factor = 2.128, ERA=B). \*equal first authors

Thomas, M.G. (2010). Parkinson's Disease: A study of the role of transcription factors in cell therapies. *Regenerative Medicine.* 5(3):441-450 (Invited review) (Impact Factor = 2.786).

#### Conference abstracts:

14<sup>th</sup> International Congress of Parkinson's Disease and Movement Disorders, Buenos Aires, Argentina. (June 2010) M Thomas, T Chipungu, C Watson, C Lind. A new DBS clinical target for Parkinson's disease (PD) - mapping the caudal zona incerta (ZI).

10<sup>th</sup> Global Conference for the International Federation on Ageing, Melbourne. (May 2010) M. Giles, M. Thomas, G. Lewin. Ageing Intensifies the Care Needs of Adults Living with Parkinson's Disease and Their Carers.

The 30th Annual Meeting of the Australian Neuroscience Society, in conjunction with the 50th Anniversary Meeting of the Australian Physiological Society. (January 2010). T. Chipungu, M. Thomas, C. Lind, C. Watson. Mapping the primate zona incerta by comparison with the pattern of immunomarkers in the rat.

The 30th Annual Meeting of the Australian Neuroscience Society, in conjunction with the 50th Anniversary Meeting of the Australian Physiological Society, Sydney. (January 2010). L. Leow, Loftus, A. M, Hammond. G. R. Parkinson's disease patients can adapt to perturbed visual feedback with sufficient training.

17th Annual College of Clinical Neuropsychologists Conference, Perth. (September 2010). L. Leow, Loftus, A. M, Hammond. G. R. How patients with Parkinson's disease adapt movement to perturbed visual feedback.

5<sup>th</sup> Federation of the Asian and Oceanian Neuroscience Societies Congress, Lucknow, India. (November 2010). L. Leow, Loftus, A. M, Hammond. G. R. Visuomotor adaptation in Parkinson's disease.

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

- Maria Albertsen (PhD, Human Biology, ECU)
- Tiza Chipungu (Honours, Human Biology, ECU)
- Roger Pegoraro (PhD, Sports Science, ECU)
- Maria Kroczeck (PhD, Psychology, UWA)
- Michelle Marneweck (PhD, Psychology, UWA)
- Li-ann Leow (PhD, Psychology, UWA)

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

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

International

Dr Roger Barker, Cambridge Centre for Brain Repair.

Local

Dr Margaret Giles

- Senior Lecturer School of Accounting Finance and Economics Faculty of Business and Law, ECU.
- Wrote and submitted a manuscript which is currently under review (Giles, M., **Thomas, M.**, Lewin, G. Ageing Intensifies the Care Needs of Adults Living with Parkinson's Disease and Their Carers. *Neurological Sciences*).

Ass Prof Moira Sim

- Coordinator, Graduate and Higher Degree Systems Program, School of Nursing, Midwifery and Postgraduate Medicine, ECU
- AI on a NHMRC grant that ParkC is going to submit in 2011

Dr Barry Vieira

- Clinical Head of Service Rehabilitation and Aged Care, Osborne Park Hospital Program
- AI on a NHMRC grant that ParkC is going to submit in 2011

Prof Charles Watson

- Western Australian Biomedical Research Institute, Curtin University of Technology
- Co-supervised an ECU Honours student (Tiza Chipungu).

Prof Chris Lind

- Professor School of Surgery, UWA and Consultant Neurosurgeon Neurosurgical Service of Western Australia, Sir Charles Gairdner Hospital & Royal Perth Hospital
- Co-supervisor of an ECU Honours student (Tiza Chipungu)
- Dr Thomas co-supervised (with Prof Lind) an UWA Masters of Medical Science student (Mark Lam).

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

1. ParkC's Open Day, held 13 November 2010. Our annual event that aims to inform the community about the important work undertaken at ParkC and its relevance within the international scene. Attended by 200 members of the community. Presentations given by Chief Scientist of WA, Professor Lyn Beazley, Dr Meghan Thomas and Dr Roger Barker (Cambridge University).
2. ParkC cake stall at the Parkinson's Unity Walk – raised over \$300 for the Parkinson's Association and increased awareness of ParkC.
3. Hosted Dr Roger Barker (Cambridge University). Organised for Dr Barker to give presentations at 1) the Rotary Club of Crawley, 2) Parkinson's WA, 3) ParkC's Open Day, 4) medical and

allied health professionals 5) young onset group. The aim of Dr Barker's visit was to strengthen our collaboration and raise awareness of ParkC research both within the general community and medical and allied health professionals.

4. Movie night hosted by Grand Cinemas, Warwick. Sold over 100 tickets and raised in excess of \$2,000 for ParkC.
5. Regular attendance at support group meetings.
6. Distribution of the ParkC Newsletter and establishment of a ParkC Facebook page.
7. Dr Thomas took part in the ECU Research Week public lecture

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

We plan to continue to develop ParkC's three research areas. In particular, we plan to conduct the two year follow-up time point as part of the "heterogeneity within PD" study and develop our clinical translational laboratory research.

We are preparing one NHMRC and one ARC Discovery grant for submission in the 2011 grant rounds. In addition we will seek funding from other grant bodies.

We plan to attract outstanding research students to all three ParkC areas of interest, build awareness and the reputation of the annual ParkC Open Day, and develop ParkC's track record in Parkinson's research through the publication of peer-reviewed manuscripts and conference attendances.

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