



Faculty of Computing Health and Science

Research Group, Research Centre or Research Institute Report

RESEARCH UNIT NAME: Parkinson's Research Cohort (ParkC)

RESEARCH UNIT LEVEL (tick):

Level I Research Group:

Level II Research Centre:

Level III Research Institute:

Centre of Excellence:

REPORT TYPE: ANNUAL REPORT

YEAR: 2008

BRIEF OVERVIEW (1 – 2 paragraphs):

The vision of ParkC is to better 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.

A specific aim of ParkC is to foster high quality research in PD and to contribute to the needs of PD research at local, National, and International levels. This will be achieved by:

- 1) Continued engagement with PD communities
- 2) Collaborative links with other relevant research groups and institutes
- 3) Attracting research funding from competitive grant agencies and industry
- 4) Attracting and supporting research students
- 5) Establishing research programs that include:

- 5.1. The development of a prospective database of people with PD to investigate various aspects of PD including cognitive functioning, quality of life, mental health, personality, functionality and daily activities, movement symptomatology, genetic predispositions, and the relationship between motor and non-motor symptoms of PD.

This will lay the foundation not only for better understanding of the heterogeneity of PD but also for the translation of novel therapies for patients.

- 5.2. Interventions that reduce the impact of PD

- 5.3. Development of treatments such as cell replacement therapies.

MEMBERSHIP (Full Title of Researchers, including staff, research students, adjuncts):

Dr Meghan Thomas (Coordinator, ParkC, ECU)

Dr Kate Cruise (Postdoctoral Research Fellow, ParkC, ECU)

Mr Roger Pegoraro (Exercise Physiologist, ParkC, ECU)

Professor Robert Newton (Director, Vario Institute, ECU)

Dr Romola Bucks (Lecturer, School of Psychology , UWA/Scientific Steering Committee, ParkC, ECU)

Dr Andrea Loftus (Lecturer, School of Psychology , UWA/Scientific Steering Committee, ParkC, ECU)

Dr Natalie Gasson (Lecturer, School of Psychology , Curtin University of Technology/Scientific Steering Committee, ParkC, ECU)

Dr Roger Barker (University Reader in Clinical Neuroscience, Cambridge University, UK/Honorary Consultant in Neurology, Addenbrooke's Hospital, Cambridge UK/Scientific Steering Committee, ParkC, ECU)

Mrs Pam van Omme (Carer of a person with PD/Scientific Steering Committee, ParkC, ECU)

Ms Karen Rowland (Person with PD/Scientific Steering Committee, ParkC, ECU)

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

ECU Early Career Research Grant \$24,935. 2008. Cruise, K.E., Thomas, M., Bucks, R.S., & Loftus, A.M. 'Profiling non-motor symptoms in early Parkinson's disease'

Parkinson's Association of WA \$6,000. 2008. Thomas, M. 'Saving the substantia nigra? A novel role for the gene Pax6'

PUBLICATIONS, REFEREED BOOKS, CHAPTERS, JOURNAL ARTICLES, CONFERENCE PAPERS, REPORTS:

Meghan Thomas*, Judith A. Blake*, Jennifer A. Thompson*, Robert White*, Melanie Ziman* (2008). Perplexing Pax: From Puzzle to Paradigm. Developmental Dynamics. 237:2791-2803. (Impact Factor = 3.169) *equal first authors

Meghan Thomas, P Tyers, SE Lazic, RA Barker, L Beazley, M Ziman (2009). Graft outcomes influenced by co-expression of Pax7 in graft and host tissue. Journal of Anatomy. 214:396-405 (Impact Factor = 2.58)

Cruise, K.E., Bucks, R.S., Loftus, A.M., Newton, R.U., Pegoraro, R., & Thomas, M.G. Selective Benefits of Exercise on Executive Function and Psychological Wellbeing in Parkinson's Disease. Movement Disorders. (In preparation) (Impact Factor = 3.207)

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

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 Visitors: Cambridge Brain Repair Centre, UK.

Dr Roger Barker and Dr Anna Goodman, visited ParkC for 1 week in November 2008. Dr Barker has been a keen collaborator and supporter of ParkC since its inception. This collaboration ensures that data collected at ParkC can be cross-linked to that collected by Dr Barker's group in the UK thereby value adding to the ParkC data. In addition, Dr Barker is an Associate Investigator on the Australian Research Council Discovery Grant held by Dr Meghan Thomas. Strengthening this collaboration is an important priority of ParkC. Dr Barker has worked closely with members of ParkC in the establishment of the current research projects, as well as providing substantial input into the development of future research projects.

Local Collaborations: Neurofinity Surgical NeuroDiscovery Group

This group is an academic neurosurgery research group established as a joint initiative of the West Australian Neurosurgical Service and the Centre for Neuromuscular & Neurological Disorders at the University of Western Australia. Chris Lind established the group after taking responsibility for Functional Neurosurgery at Sir Charles Gairdner Hospital in 2007 and taking up a Clinical Senior Lectureship in the University of Western Australia in 2008. Using state of the art surgical techniques the group's focus is neuroscientific discovery based on exquisitely accurate electrode placement during deep brain stimulation surgery.

The Group includes neurosurgeons, neuroscientists and neuroscience nursing staff dedicated to furthering the functional neurosurgical treatment of neurological disorders. They have a growing

clinical and scientific collaborations within Perth, Australia and internationally. The research programmes focus on both clinical Deep Brain Stimulation Surgery and laboratory research exploring stereotactic convection-enhanced delivery of highly targeted treatments for disorders such as Parkinson's disease. Mr Chris Lind invited Dr Thomas to join the group to direct the Surgical NeuroDiscovery Group's laboratory research.

Local Collaboration: School of Psychology and Social Science, ECU

Dr Rodrigo Becerra (Lecturer in Psychology, School of Psychology and Social Science, ECU) has an interest in the relationship between PD and "Theory of Mind" (which refers to the ability to make inferences about other people's mental states including intentions, feelings, emotions and beliefs). Dr Rodrigo Becerra will co-supervise an ECU Doctor of Psychology (DPsych) student to work in conjunction with ParkC to develop this area of research. The student's other supervisor will be Dr Romola Bucks (School of Psychology, UWA).

Local Collaboration: School of Psychology, UWA

Ms Li-Ann Leow (PhD, School of Psychology, UWA. Supervised by Drs Andrea Loftus and Geoff Hammond)

Ms Karen Brooker (Master of Psychology (Clinical), School of Psychology, UWA. Supervised by Drs Andrea Loftus and Romola Bucks)

Ms Di Harvey (Master of Psychology (Clinical), School of Psychology, UWA. Supervised by Drs Andrea Loftus and Romola Bucks)

Ms Maria Krozcek (Bachelor of Psychology with Honours, School of Psychology, UWA. Supervised by Dr Andrea Loftus)

Ms Sam Jukic (Bachelor of Psychology with Honours, School of Psychology, UWA. Supervised by Dr Andrea Loftus)

COMMUNITY ENGAGEMENT ACTIVITIES AND LINKAGES (Provide an overview)

In 2008 ParkC was very active in Community Engagement Activities.

Dr Meghan Thomas attended all five Parkinson's WA support group meetings for Young Onset PD. Dr Kate Cruise has also attended support group meetings.

Both Dr Thomas and Cruise work closely with Parkinson's Association WA (the peak body for PD within WA). ParkC research has received ethics committee approval from the Parkinson's WA Research Committee. Regular updates on the progress of research being undertaken at

ParkC appear in the bimonthly Parkinson's WA Newsletter which has a circulation of 1,100 members.

ParkC/Dr Meghan Thomas and/or Dr Roger Barker's visit to Perth featured on Howard Sattler 6PR Radio, Curtin FM Radio, and in numerous local newspapers and websites, and on the television program 'A Current Affair'. In addition, ParkC organised and hosted Dr Roger Barker's seminar at ECU Joondalup which was attended by 300 members of the public, as well as organising presentations to local PD support communities and local neurologists.

The participants (and their partners) of a 12 week research program conducted by ParkC were invited to attend a BBQ at the ECU Joondalup lake. At the BBQ, ParkC awarded participants with Certificates of Completion and thanked the participants for taking part in the study.

ParkC Early Onset Research Scholarship (PORSCH). The Parkinson's WA Young Onset Support Group established this scholarship out of their interest to support local research into PD. The scholarship is to assist a student/s to conduct research into PD. The group has been successful in 2008 in raising over \$10,000. The scholarship recipient will be required to attend at least two Young Onset Support Group meetings per year to inform the group about their research plans and progress.

Royal Freshwater Bay Yatch Club (RFBYC) Melbourne Cup Luncheon. Each year the RFBYC choses a cause/charity to which to donate the proceeds of their Melbourne Cup Luncheon. ParkC was nominated and chosen to be the recipient for the 2009 and 2010 Luncheons. In 2009 over 250 tickets were sold and \$13,000 was raised.

FUTURE PLANS AND DIRECTION (Provide an overview)

In 2008 ParkC has achieved its intended goals. We have maintained our strong engagement with PD communities, and we have established and strengthened links with other relevant research groups (Dr Barker, Cambridge University, UK; Dr Rodgrio Becerra, School of Psychology and Social Science, ECU; Mr Chris Lind, Neurofinity Neurosurgical Research Group, QEII; Establishment of the ParkC Scientific Steering Committee). ParkC, in conjunction with our collaborators and members, has attracted 3 postgraduate and two undergraduate psychology students as well as one Honours and one PhD laboratory research students.

Further, we have established the prospective database of participants with neurologist diagnosed PD to investigate various aspects of PD. To date, 100 people with PD have been tested and entered into the database. We have completed a 12 week, phase I clinical trial investigating the effects of a combined anaerobic/aerobic exercise intervention program for people with PD. This study is one of the largest and longest be to conducted in this field. Several manuscripts are in preparation based on the results of this study. In addition, in 2009 we submitted an NHMRC grant application which included results from this study. The development of therapies such as cell replacement therapies has been progressing. It is anticipated that the collaboration with Mr Chris Lind will result in further development of this area.

Future plans

In 2009 ParkC is aiming to:

- 1) Publish a manuscript on the 12 week exercise intervention program
- 2) Publish a manuscript on the cell replacement work
- 3) Continue to grow the prospective database of participants with neurologist diagnosed PD
- 4) Continue to strengthen our Community Engagement
- 5) Attract and support research students

DATE OF NEXT FORMAL REVIEW

28th May 2010.