



Position description

Research Fellow

Department/Unit	Psychology
Faculty/Division	Faculty of Medicine, Nursing and Health Sciences, School of Psychological Sciences
Classification	Level A or Level B
Work location	Clayton campus
Date document created or updated	11 April 2017

Organisational context

Monash is a university of transformation, progress and optimism. Our people are our most valued asset, with our academics among the best in the world and our professional staff revolutionising the way we operate as an organisation. For more information about our University and our exciting future, please visit www.monash.edu

The **Faculty of Medicine, Nursing & Health Sciences** is the University's largest research faculty. World-class researchers work across disciplines including laboratory-based medical science, applied clinical research, and social and public health research. The faculty is home to a number of leading medical and biomedical research institutes and groups, and has contributed to advances in many crucial areas. Our expertise in life sciences and biomedicine is recognised both nationally and internationally.

From a teaching perspective, our education curriculum covers a range of disciplines, including medicine, nursing, radiography & medical imaging, nutrition & dietetics, paramedic studies, biomedical sciences, physiotherapy, occupational therapy, behavioural neurosciences and social work. We take pride in delivering outstanding education in all courses, in opening students to the possibilities offered by newly discovered knowledge and in providing a nurturing and caring environment. To learn more about the faculty, please visit www.med.monash.edu.au/

The **Monash School of Psychological Sciences** is ranked among the best in the world. Our School's mission is to develop students and research outcomes that make significant contributions to improving the lives of others globally. Our overarching vision is to make significant and long-lasting impact that changes the world around us, beginning in infancy and across the lifespan. Drawing on the expertise of our staff and the University's unique research platforms and technology, our mission is to sustain and build on Monash's position with world-class research and teaching in Psychology.

The newly established **Monash Institute of Cognitive and Clinical Neurosciences** (housed within the School of Psychological Sciences) will provide an exceptional research environment for discoveries that change our understanding of the brain. Through excellent research and training, a wide network of international partners, and strong industry engagement MICCN will lay the foundation for a pipeline of discovery in areas of critical importance of the human brain and see that knowledge translated into the clinic, the workplace and the community. The Institute represents the largest grouping of cognitive and clinical neuroscientists in Australia and Asia-Pacific.

Position purpose

We seek a talented, dynamic postdoctoral researcher to join the Brain and Mental Health Laboratory (BMH) at the Monash Institute of Cognitive and Clinical Neurosciences (MICCN). The appointee will conduct scientific research developing and applying biophysical models of large-scale brain dynamics, particularly neural mass models and neural field models. The work will focus on (1) applying the models to understand empirical brain imaging data acquired with magnetic resonance imaging (MRI), positron emission tomography (PET), electroencephalography (EEG), magnetoencephalography (MEG) and/or transcranial magnetic stimulation (TMS); (2) integrating the models with data derived from genetic and other molecular techniques; and (3) using the models to understand brain disturbances in psychiatric disorders such as schizophrenia.

The successful candidate will have strong quantitative and programming skills and an excellent, nationally competitive track record. The appointee will be expected to work collaboratively as part of a larger, multidisciplinary team, providing analysis support for other team members, and assisting in the supervision of students and other researchers. The appointee will work under the joint supervision of BMH Co-Director Associate Professor Alex Fornito and MICCN Adjunct Professor Gustavo Deco, and will be expected to travel to Professor Deco's institute in Spain at least once per year.

Reporting line: The position reports to Associate Professor Alex Fornito, co-Director of the Brain and Mental Health Laboratory and Professor Gustavo Deco

Supervisory responsibilities. Assistance in supervising Honours and graduate research students

Financial delegation and/or budget responsibilities including value of assets managed Nil

Key responsibilities

Research Fellow – Level A

A Level A research-only academic is expected to contribute towards the research effort of the university and to develop her/his research expertise through the pursuit of defined projects relevant to the particular field of research.

Specific duties required of a Level A research-only academic may include:

1. The conduct of research under limited supervision either as a member of a team and the production or contribution to the production of conference and seminar papers and publications from that research
2. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise
3. Contribution to applications for external research funding
4. Limited administrative functions primarily connected with the area of research of the academic
5. Development of a limited amount of research-related material for teaching or other purposes with appropriate guidance from other staff
6. Occasional contributions to teaching in relation to her/his research project(s)
7. Conduct of advanced research procedures, particularly in the domain of computational modelling of brain imaging data, as well as work on experimental design and the operation of advanced laboratory and technical equipment
8. Attendance at meetings associated with research or the work of the organisational unit to which the research is connected and/or at departmental, school and/or faculty meetings and/or membership of a limited number of committees
9. Co-supervision of students and other researchers working as part of our team
10. Advice within the field of the staff member's research to postgraduate students

Research Fellow – Level B

A Level B research-only academic is expected to carry out independent and/or team research within the field in which he/she is appointed and to carry out activities to develop her/his research expertise relevant to the particular field of research.

Specific duties required of a Level B research-only academic may include:

1. The conduct of research under limited supervision either as a member of a team or, where appropriate, independently and the production or contribution to the production of conference and seminar papers and publications from that research
2. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise
3. Contribution to, and initiation of, applications for external research funding
4. Limited administrative functions primarily connected with the area of research of the academic
5. Development of a limited amount of research-related material for teaching or other purposes with appropriate guidance from other staff
6. Occasional contributions to teaching in relation to her/his research project(s)
7. Conduct of advanced research procedures, particularly in the domain of computational modelling of brain imaging data, as well as work on experimental design and the operation of advanced laboratory and technical equipment
8. Attendance at meetings associated with research or the work of the organisational unit to which the research is connected and/or at departmental, school and/or faculty meetings and/or membership of a limited number of committees
9. Co-supervision of students and other researchers working as part of our team
10. Advice within the field of the staff member's research to postgraduate students

Key selection criteria

Research Fellow Level A

Education/Qualifications

1. The incumbent should possess:
 - a PhD in Physics, Mathematics, Engineering, Computer Science or related discipline from a recognised university or equivalent qualifications and research experience in the area
 - an equivalent combination of relevant experience and/or education/training

Knowledge and Skills

2. Strong quantitative and programming skills (particularly Matlab, python and/or C++)
3. Expertise in calculus (ordinary and stochastic differential equations), numerical and computational modelling, model fitting and optimization, graph theory, network science or related disciplines
4. Evidence of expertise in research design and analysis
5. Evidence of strong research resultant in publications, conference papers, reports or professional or technical contributions resultant in evidence of research ability
6. Evidence of capacity to work constructively and collaboratively with colleagues, internal and/or external, in furthering the aims of the School
7. High degree of innovation, dedication and creativity as a researcher

8. Demonstrated oral and written communication skills
9. High level organisational skills, with demonstrated capacity to establish and achieve goals
10. Willingness to learn new techniques/concepts
11. The ability to work as part of a multidisciplinary team
12. The ability to prepare and communicate the aims and outputs of research projects in a range of formats including formal and informal oral presentations, refereed research papers and reports
13. Well-developed computer literacy (i.e. word processing and use of databases)

Research Fellow Level B

Education/Qualifications

1. The incumbent should possess:
 - a PhD in Physics, Mathematics, Engineering, Computer Science or related discipline from a recognised university or equivalent qualifications and research experience in the area
 - an equivalent combination of relevant experience and/or education/training
 - considerable postdoctoral research experience which has resulted in publications, conference papers, reports or professional or technical contributions which give evidence of research ability

Knowledge and Skills

2. Strong quantitative and programming skills (particularly Matlab, python and/or C++)
3. Expertise in calculus (ordinary and stochastic differential equations), numerical and computational modelling, model fitting and optimization, graph theory, network science or related disciplines
4. Evidence of expertise in research design and analysis
5. Evidence of a highly competitive track record, based on publications, conference papers, reports or professional or technical contributions resultant in evidence of research ability
6. Evidence of capacity to attract competitive research funding
7. Evidence of capacity to work constructively and collaboratively with colleagues, internal and/or external, in furthering the aims of the School
8. High degree of innovation, dedication and creativity as a researcher
9. Demonstrated oral and written communication skills
10. High level organisational skills, with demonstrated capacity to establish and achieve goals
11. Willingness to learn new techniques/concepts
12. The ability to work as part of a multidisciplinary team
13. The ability to prepare and communicate the aims and outputs of research projects in a range of formats including formal and informal oral presentations, refereed research papers and reports
14. Well-developed computer literacy (i.e. word processing and use of databases)

Other job related information

- Travel (e.g. to other campuses of the University) and to Professor Deco's Institute in Spain will be required
- There may be peak periods of work during which the taking of leave may be restricted

Legal compliance

Ensure you are aware of and adhere to legislation and University policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness Occupational Health and Safety, supporting a safe workplace Conflict of Interest (including Conflict of Interest in Research) Paid Outside Work Privacy Research Conduct and Staff/Student Relationships