THE UNIVERSITY OF MELBOURNE

Melbourne Neuroscience Institute

THE FLOREY INSTITUTE OF NEUROSCIENCE & MENTAL HEALTH

# PHD COURSEWORK IN NEUROSCIENCE

## WHY?

A PhD should prepare you to be a free-standing independent neuroscientist. PhDs focused entirely in one laboratory generally provide depth but not breadth. Neuroscience now encompasses so many techniques and sub-disciplines that the successful future neuroscientist must have a breadth of knowledge, if not expertise across this discipline.

To this end, the introductory PhD coursework provides a broad overview of current research methods and approaches. Importantly, knowledge of those areas outside those of your specific project and laboratory should allow you to think 'outside the box' and become a more successful, knowledgeable and well-rounded scientist.

The course also provides a great opportunity to interact with peers. We hope to build a spirit of camaraderie within the cohort of PhD neuroscience students. This will be beneficial both for your science and learning, stimulating and enjoyable socially, and supportive during the sometimes challenging periods of a PhD.

## WHAT?

The structured coursework is taken over the first month of candidature and includes stepped assessment designed to provide a sound basis on which the PhD research project can be built and conducted more efficiently. The Florey and the University have joined forces to develop this inspiring doctoral program, for which Course Convener Dr Kathy Lefevere was awarded a 2011 Melbourne Medical School Teaching Excellence Award.

The research course aims to give a broad oversight of the different disciplines, approaches and methods used within the broad field of neurosciences.

The full coursework will assist with achieving PhD research to the highest international standard, smooth progression towards confirmation and timely thesis completion.

Content covers key areas of contemporary neuroscience research, teaches essential theoretical concepts, methodologies and advanced research skills, such as reading and understanding specialised literature more critically, effective communication and inter-disciplinary collaboration.

The course is open to all new graduate researchers with a project related to the neurosciences across the University and affiliated institutes. The coursework forms part of the PhD confirmation requirements at the Florey. Places may be limited, and priority will be given to graduate researchers for whom the course is a confirmation requirement, followed by those taking the full course as optional and then those taking selected subjects last.

## OUTCOMES

On completion of the full program, first year PhD candidates will have:

- developed a broader view of the field and a better sense of where their project fits in advancing contemporary neuroscience;
- developed a better understanding and deeper knowledge in their own area of interest;
- developed a general understanding of various approaches, other than those more immediately related to their thesis, and of other disciplines interested in neuroscience areas;
- developed an understanding of how other disciplines can bring new knowledge and vision to a research problem;
- gained an appreciation of the value of collaborating in research.

## PRESENTERS AND FACILITATORS

Over 60 expert researchers, guest lecturers, advanced PhD candidates and support staff from a range of affiliated research institutes and centres/ schools/ departments across the University:

Professors Peter Bossaerts, Alex Boussioutas, Fernando Calamante, Leonid Churilov, Alan Connelly, Geoffrey Donnan AO, Mary Galea, David Grayden, Tony Hannan, Rob Hester, Graeme Jackson, Andrew Lawrence, Steven Petrou, Chris Rowe, Sarah Wilson;

A/Professors David Abbott, Olivia Carter, Leigh Johnston, Alice Pebay, Chris Reid;

Drs Wah Chin Boon, Robyn Brown, Emma Burrows, Mathias Dutschmann, Despina Ganella, Ben Gu, Jenny Gunnersen, Michael Hildebrand, Jee Hyun Kim, Peter Kitchener, Kathy Lefevere, Heather Madsen, Carsten Murawski, Vicky Perreau, Christina Perry, Brad Turner and many more

**For full benefit, it is strongly recommended new graduate researchers in neurosciences take the full 4-week program before starting laboratory or fieldwork.**
**Subject selection must be discussed with supervisors.**

New neuroscience graduate researchers are advised to complete PhD enrolment no later than February 9th. Due to the design of the program, graduate researchers and supervisors are urged to make every effort to meet this deadline. Supervisors should advise prospective students wishing to start at a later date to seriously consider altering the commencement of their studies to coincide with this date. Enrolment in the PhD at a later date may result in enrolment in the coursework program in Semester 1 of the following year, making it a less fulfilling experience.

# COURSEWORK STRUCTURE

The 4-week coursework program starts with an introductory day followed by four subjects, which must all be completed successfully by all new Florey–based PhD students before confirmation. The Design & Analysis for Neurosciences (A) subject is core for all Florey students, who must then choose one 12.5 pt discipline-based (A) subject closest to their thesis area of research and another two 6.25 pt discipline-based (B) subjects. Non-Florey-based graduate researchers may opt to take the full program as above (recommended) or selected subjects. Note full attendance and active participation is required in all these ungraded (hurdle Pass/Fail) graduate subjects.

## DAY 1 - GETTING STARTED IN THE NEUROSCIENCE PhD PROGRAM

This introductory day program (0 points) provides essential information for successful completion of the coursework subjects and is compulsory for all students taking all or any of the following coursework subjects

## WEEK 1 - NEUR90007/90008 DESIGN AND ANALYSIS FOR NEUROSCIENCES – A OR B

A customised research methods subject suitable for beginner to intermediate level researchers from the basic and clinical neuroscience disciplines.
CONVENERS: Prof Leonid Churilov, Head, Statistics and Decision Science Academic Platform, The Florey & Adjunct Associate Professor, Departments of Mathematics and Statistics & Medicine Austin Health, The University of Melbourne & Dr Kathy Lefevere, Senior Lecturer, Department of Medicine Austin Health, The University of Melbourne.

## WEEK 2 - NEUR90009/90010 BRAIN IMAGING AND NEURAL NETWORKS – A OR B

Suitable for any neuroscience-related discipline, including among others Psychology and Neuro-engineering. CONVENERS: Prof Alan Connelly, Head, Imaging Division, The Florey & Dr Kathy Lefevere, The University of Melbourne.

## WEEK 3 - NEUR90011/90012 MOLECULAR AND CELLULAR NEUROSCIENCE – A OR B

Suitable for any neuroscience-related discipline, including among others Psychology and Neuro-engineering. Students without any molecular biology background must attend the "Molecular Biology 101" workshop on March 8th PM. CONVENERS: Dr Wah Chin Boon, Senior Research Fellow, Group Leader Steroid Neurobiology, The Florey & Dr Kathy Lefevere, The University of Melbourne.

## WEEK 4 - NEUR90013/90014 NEUROSCIENCE OF BEHAVIOUR AND COGNITION – A OR B

Suitable for any neuroscience-related discipline, including among others Psychology and Neuro-engineering. CONVENERS: Dr Robyn Brown, NHMRC Peter Doherty Fellow, Behavioural Neuroscience Division, The Florey & Dr Kathy Lefevere The University of Melbourne.

This 4-week intensive program is part of the 300-pt MDHS PhD Program with Coursework in Neuroscience. Please refer to: **http://go.unimelb.edu.au/as86** for further course and subject details. Further details are also available on the Information Sheet available at **http://go.unimelb.edu.au/ye86**

## COURSEWORK COMPLETION RECOGNITION

Coursework subjects (Pass/Fail) will appear on student's University of Melbourne transcript.

## COURSEWORK APPLICATION DEADLINE

The signed PhD subject selection form should be submitted as soon as possible and by 9th February to the Medicine, Dentistry and Health Sciences Student Centre, Brownless Biomedical Library, Level 1, The University of Melbourne, VIC 3010, Australia.

## HOW TO APPLY?

- Read the Info Sheet and discuss with your supervisors your best choice of full program or individual subjects; and if you are not enrolled through the Florey Department of Neuroscience and Mental Health*, reach agreement with your supervisor whether the subjects will count as a hurdle requirement for your PhD confirmation.
- Follow the procedures to submit a formal application for the PhD to your school or faculty (refer to **http://futurestudents.unimelb.edu.au/info/research** for How to Apply information)
- Complete the PhD subject selection form (see contact information below) with your supervisor and seek approval of the plan from your supervisor, Head of Academic Department and the Neuroscience PhD Course Convener Dr Kathy Lefevere-Burd, before returning the signed form to the Student Centre for enrolment.

* Florey-enrolled students should note that successful completion of the coursework is a requirement for passing PhD confirmation and this is in addition to any other hurdle requirements set by your Advisory Panel.

## SINGLE SUBJECT STUDY VIA COMMUNITY ACCESS PROGRAM (CAP)

Limited places may be available in some subjects for new PhD students studying neuroscience at other tertiary institutions. For more details on CAP visit https://futurestudents.unimelb.edu.au/courses/single_subject_studies. PhD candidates wishing to apply for subjects via CAP should first contact Course Convener Dr Kathy Lefevere-Burd to check for place availability.

## VENUE

Ian Potter Auditorium, Ground Floor Kenneth Myer Building (#144), Melbourne Brain Centre 30 Royal Parade, The University of Melbourne, Parkville, Victoria 3010 - Australia

| 2018 Dates | |
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| Getting Started in the Neuroscience PhD Program | MARCH<br>Friday 9 (compulsory intro) |
| Design & Analysis for Neurosciences – A or B | MARCH<br>Monday 12 (Labour Day) to Friday 16 |
| Brain Imaging & Neural Networks – A or B | MARCH<br>Monday 19 to Friday 23 |
| Molecular & Cellular Neuroscience - A or B | APRIL<br>Monday 9 to Friday 13 |
| Neuroscience of Behaviour & Cognition – A or B | APRIL<br>Monday 16 to Friday 20 |

## INFORMATION

For further information visit **http://go.unimelb.edu.au/ye86** or contact the Medicine, Dentistry and Health Sciences Student Centre, Brownless Biomedical Library Level 1, The University of Melbourne, Parkville or the Neuroscience PhD Course Convener Dr Kathy Lefevere-Burd
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