



Graduate Program in Evolution & Ecology 2010

The graduate program of the Evolution & Ecology Research Centre at UNSW aims to foster excellence in postgraduate research and supervision, and the development of skills to better equip research students for careers in science. Students are offered support for their own research projects and a wide-ranging program of activities aimed at developing a broader conceptual understanding of the discipline and enhanced research skills. Excellence in postgraduate research is recognised by annual prizes for theses, publications, presentations and research activities.

Degree programs supported

The graduate program supports the research students of the academics and research fellows in the E&ERC. These are from the School of Biological, Earth and Environmental Sciences, the School of Biotechnology and Biomolecular Sciences, and the School of Mathematics and Statistics. The students may be enrolled in the following postgraduate research degrees:

Doctor of Philosophy (PhD): 3-4 years full time

Master of Science by Research (MSc): 2 years full time

Master of Philosophy (MPhil): 1.5 years full time, 18 units of credit coursework, 54 units of credit research

The MPhil provides an alternative to the Honours year for those students with an excellent academic record, providing greater research experience and a postgraduate degree within 18 months of completing undergraduate studies. MPhil places within the E&ERC are offered on a competitive basis.

Students are required to enrol through the school of their supervisor. The supervisor may then elect students to be part of the E&ERC graduate program.

FEATURES OF THE GRADUATE PROGRAM

Postgraduate Research Forum

Twice each year, the research activities of students are featured in the E&ERC Postgraduate Forum. Presentations from students across the centre, and associated social events, promote the effective communication of science and allow students to receive valuable feedback from fellow students and academics. The first forum will be held on 09-11 June 2010, and the second in November (usually the week after the last week of each session (June and November). All students are expected to attend, organising their research (i.e. fieldwork commitments) well in advance of these dates.

E&ERC Research Seminars

The Centre features regular research seminars on Tuesday afternoons (3 pm, Biomed B) by resident and visiting academics and research fellows. Attendance at these seminars is considered essential for exposure to wide variety of evolutionary and ecological research topics, critical thinking beyond a student's individual project and gaining potential contacts.

Seminars are co-ordinated by Dr Russell Bonduriansky (r.bonduriansky@unsw.edu.au). Students should check the E&ERC website for dates and times of upcoming seminars.

Distinguished Visitor Program

The E&ERC hosts extended visits from distinguished research scientists. The visitors will give research presentations, participate in workshops and discussions, meet individually with research students, and attend dinners or other social events. Once a year our visitor will be part of a Diversity in Science program which is based on the successful BEES Women in Science program (2004-6). The aims of this program are to showcase excellent science, highlight and address issues associated with diversity in science and to workshop strategies for career success. This program is targeted especially at early career researchers.

One of the distinguished visitors each year will be selected by the postgraduate students, offering an opportunity for students to meet important researchers relevant to their field and make important contacts (i.e., potential employers of postdocs). Students with ideas for potential visitors should contact Dr Angela Moles (a.moles@unsw.edu.au) with their suggestions.

Research Discussion Groups

Students and staff regularly meet to discuss ideas in evolution and ecology. These groups feature discussions of published papers, short presentations of student research, and sessions for planning proposed research. Currently active discussion groups include:

- Evolution of sexual selection, ageing – Brooks & Bonduriansky laboratories
- Conservation genetics – Sherwin laboratory
- Marine ecology and evolution – Johnston, Poore and Steinberg laboratories
- Fisheries and marine environmental research – Suthers laboratory
- Predator-prey interactions and invasive species – Banks laboratory
- Ecogeeks – Bonser and Moles laboratories

Students should contact the academics in charge to obtain discussion schedules.

Special Interest Advanced Courses

The E&ERC offers advanced courses in evolution and ecology for postgraduate and honours students. These are aimed at developing the research and critical thinking skills of students, giving them a broader conceptual understanding of their discipline.

In session 2, 2010, the course is yet to be determined.

Past special interest courses:

Session 1, 2008. **A critical look at the modern relationships between evolutionary biology, society and the meaning of life** (Rob Brooks and Erik Postma)

Session 2, 2008. **Strategies for successful publishing in ecology and evolution** (Peter Banks and Alistair Poore)

Session 1, 2009. **Selling Your Science** (Tracey Rogers)

Session 2, 2009. **Topics in the Philosophy of Science** (Russell Bonduriansky)

Session 1, 2010. **Modeling Workshop** (Troy Day – Queen’s University, Canada)

The Exchange Program

In 2011, the E&ERC is initiating a post graduate exchange program with the graduate program in Evolution and Ecology at the University of California at Davis. This program is being designed to promote the building of international research connections, and to gain experience on how science is conducted in other countries. UC Davis is internationally recognised as a top institution for evolution and ecology research. We believe that interactions between students and academics at our two institutions will be a valuable experience for those involved in this program.

The Exchange Program will involve two phases. Phase I will take the form of a 10-day visit by one Academic and 6 postgraduate students from UNSW’s E&ERC to UC Davis. There they will meet UC Davis students and faculty and participate, together with 6-12 UC Davis students, in a one-week intensive research course at the Bodega Bay Marine Laboratory (BML). BML is a world-class field station with access to marine, estuarine, fresh water and terrestrial environments. The idea will be to expose students to a variety of ecosystems and have them complete an accelerated team-based research project, analyse the data and present the results. The structure of course is designed to train postgraduate students to think quickly and creatively, and to teach skills in collaboration.

Phase II will involve all UNSW participants in Phase I returning home to Sydney, together with 6 students and 1 faculty member from UC Davis. All UNSW and Davis members of the exchange, plus up to six more UNSW students will then undertake a similar intensive course at UNSW’s Smiths Lake field station.

Details of the exchange program will be posted on the E&ERC website.

Conferences and Meetings

The E&ERC hosts short conferences on areas of research strength of centre students and academics. In these conferences, academics and postgrads from the E&ERC, and other Australian and global researchers present seminars and participate in discussion groups on current and future research directions in that research area. In 2009, the E&ERC hosted "The Invasion Occasion" (organised by the Angela Moles and her students), a one day conference on the evolution and ecology of invasive species. In 2011, we are planning on a similar short conference on rapid evolution (to be organised by the Brooks lab).

Development of Research Skills

The E&ERC hosts regular workshops and discussions throughout the year aimed at improving the research skills of postgraduate students. These will be held by centre academics, research fellows and distinguished visitors. Postgraduate students are encouraged to be actively involved in the selection of topics that will most benefit their research project and development as a research scientist.

Writing skills. The centre strongly promotes the written communication of research via journal articles, and the popular media. Workshops will give guidance in all steps of the publication process: manuscript preparation, selection of appropriate journals, dealing with reviewers' comments and manuscript revisions. Excellence in publication is recognised by the annual E&ERC postgraduate award for Outstanding Paper in Evolution and Ecology.

Communicating research to the broader community is encouraged via preparation of articles for the popular press, and promotion of student research on the E&ERC web page. Excellence in scientific communication in addition to journal articles is recognised by the annual E&ERC award for Outstanding Evolution & Ecology Postgraduate Researcher.

Practical skills: Academics, research fellows and distinguished visitors will periodically present workshops on specific skills relevant to their research (e.g., advanced statistical analyses). A database of research skills held by centre staff and students will facilitate skill sharing among postgraduate students.

Students should check the E&ERC website for dates and times of upcoming events.

Development of a Research Career

There is more to developing a research career than simply finishing a postgraduate degree. With experienced mentors, we aim to provide resources and advice for students at various steps along the pathway to a research career. With a program of activities for students, the E&ERC will provide advice on several aspects of a successful research career including funding opportunities, grant writing, research networking, and finding employment.

Students should check the E&ERC website for dates and times of upcoming events.

Postgraduate writing and skills transfer award. These awards will support students who have recently submitted their PhD theses to continue the preparation of journal articles from their theses. Students receiving this award will also present a short course. The short course will usually be based upon the skills they developed during their tenure as PhD students and will be presented to students in the EERC graduate program. The aim of these awards is to maximise research output increase (and to increase competitiveness for post doctoral research fellowships and research positions), and to facilitate the transfer of professional and research skills between post graduate students. Information on the application requirements and submission dates for these awards will be available on the EERC website

Social functions

The centre hosts regular social events associated with the Postgraduate Research Forum, visits by distinguished scientists and final seminars by completing postgraduate students. In addition, the EERC hosts some less formal social events such as the Quiz and Cuisine night, and beginning of year mixers.

Expectations for our Post Graduate Students

The Post Graduate program has been developed to facilitate interactions between all members of the E&ERC. Broad participation of E&ERC students and staff enhances the experience of post graduate students through increasing collaboration (and socialising) and promoting the transfer of skills between centre members. Post graduate students are expected to participate in the E&ERC functions, and attend research seminars and the post graduate research for a.

Recognition of research excellence

Each year, the E&ERC awards prizes that recognise excellence in postgraduate research conducted at UNSW. We offer the following prizes:

Outstanding Evolution and Ecology Paper

- Awarded to a study published in each calendar year with research conducted at UNSW and postgraduate student as first author.
- The paper will be selected by the E&ERC Education Subcommittee based on the significance and originality of the research, and quality of the journal in which it was published.

Outstanding Evolution and Ecology Presentation

- Awarded to an outstanding oral presentation at the E&ERC Postgraduate Forum.
- The outstanding presentation will be selected by a panel of academics, research fellows and postgraduate students. All students presenting in a given forum will be considered for the prize.

Outstanding Evolution and Ecology (Postgraduate) Researcher

- Awarded to a student with outstanding overall research performance in each calendar year.
- The student will be selected by the E&ERC Education Subcommittee based on the significance and originality of the research conducted, research output (publications and conference presentations) and contributions to outreach and E&ERC activities.

Outstanding Evolution and Ecology Thesis

- Awarded to a thesis approved for the degree of PhD, MSc or MPhil.
- The thesis will be selected by the E&ERC Education Subcommittee based on the significance and originality of research, comments from thesis examiners, research output, and documented evidence of impact. All theses submitted in a calendar year will be considered for the prize.

To be eligible for the paper or researcher prizes, students must nominate themselves or their publication. Forms will be available on the E&ERC website, with details of nomination closing dates.

SUPERVISION AND PROGRESS

Supervision

Each postgraduate student will be assigned a supervisory panel, comprising the student's supervisor and cosupervisor(s). A student may have joint supervisors if more than one academic is equally responsible for a given project. While the student will meet regularly with the primary supervisor, an important role of the supervisory panel is to assess progress and provide feedback on project and thesis planning via annual progress meetings (see below). The UNSW policy on postgraduate supervision can be found at:

www.policy.unsw.edu.au/policy/higher_degree_research_supervision.htm

Introductory Research Proposal

Within four months of commencing their project, students participating in the E&ERC graduate program are expected to submit a written introductory research proposal. The proposals are modeled on part of the grant proposals that are submitted each year to the Australian Research Council Discovery Projects scheme.

The proposal should include text in the following sections:

Student and supervisor(s):

Project title:

Aims and background:

- Describe the aims and background of the project.
- Include information about recent international progress in the field of the research and the relationship of this project to work in the field generally

Significance and innovation:

- Describe how the research is significant and whether the research addresses an important problem.
- Describe how the anticipated outcomes will advance the knowledge base of the discipline and why the project aims and concepts are novel and innovative.
- Detail what new methodologies or technologies will be developed in the course of the project.

Approach and methodology

- Outline the conceptual framework, design and methods, and demonstrate that these are adequately developed, well integrated and appropriate to the project aims
- Include a research plan and proposed timelines.

References:

Page limit: 5 pages.

After consultation with their supervisor, students should submit their introductory proposal to the Centre Manager Gemma Smart (g.smart@unsw.edu.au).

The proposals will be reviewed by your supervisor and supervisory panel for critical feedback.

Research Presentations

Students enrolled in a **PhD program** are expected to give research presentations once each year at the E&ERC Postgraduate Forum, and a final seminar after completion.

- **annual research seminars** (12 minutes +3 for questions). The research seminars are expected to be in the style of a conference presentation, covering one aspect of the project.
- **exit seminar** (30 minutes + 10) An exit seminar scheduled as a special centre seminar typically followed by a reception.

Students enrolled in a **MSc program** are expected to give research presentations once each year at the E&ERC Postgraduate Forum, and a final seminar after completion.

- **annual research seminars** (12 minutes +3 for questions)

Students enrolled in a **MPhil program** are expected to give one research presentation at the E&ERC Postgraduate Forum, and a final seminar after completion.

- **research seminar** (12 minutes +3 for questions)

Progress Reporting

Annual progress reports

Students are required to submit annual progress reports within the first 12 months of enrolment, and again for each year enrolled. The UNW policies on adequate progress are available at: www.grs.unsw.edu.au/currentstudents/progress.html

Student participation in the events presented as part of the E&ERC graduate program should be documented as "other achievements" in section B3 of the form. Student contributions in this regard will be assessed by supervisors and recognised by the annual prize for Outstanding Postgraduate Researcher

Major project review

For PhD students, the Annual Progress report that occurs after four enrolled sessions (or pro-rata for part-time students) must include a detailed review of progress toward thesis completion (section B2), and planning for remaining research (section B4). Section B4 of the form should include a thesis outline with all completed chapters, planned chapters and intentions for research publication.

A major project review and review presentation should also be undertaken by students in the MSc program wishing to transfer to the PhD program.

Submit your progress reports to the Centre Manager Gemma Smart (g.smart@unsw.edu.au) two weeks prior to your postgraduate committee meeting.

Postgraduate committee meetings

Once a year, students will meet with their supervisory panel and members of the E&ERC Education subcommittee to assess progress, providing feedback on project ideas and planning for thesis completion. The meetings also offer an opportunity for students to raise issues in the absence of their supervisor if needed. Meetings will occur in association with the submission of Annual Progress Reviews.

Changes to your enrolment status and major difficulties should be discussed with your supervisor, panel and with your school's postgraduate coordinator.

Completion

Thesis submission. The Graduate Research School has detailed instructions for the submission of higher degree theses: <http://www.grs.unsw.edu.au/currentstudents/thesis.html>. Students must lodge a notification of intention to submit two months prior to submission.

Ceremonies for final completion. The E&ERC will host ceremonies for the successful completion of higher degrees. Students that have recently submitted their theses will present their final seminar to an audience of centre members and invited guests followed by drinks and snacks.

Summary of progress requirements

PhD: starting Session 1, 2010

Year	Sessions enrolled	Written submissions	Oral presentations	Meetings of supervisory panel
1	1	Introductory proposal within 4 months of enrolment		
	2	Annual Progress review Oct 2010	Research seminar Nov 2010	Nov 2010
2	3			
	4	Annual Progress review with major project review Oct 2011	Research seminar Nov 2011	Nov 2011
3	5			
	6	Annual Progress review Oct 2012	Research seminar Nov 2012	Nov 2012
	7-8	Submit thesis 3-4 years	Final seminar within 3 months of thesis submission	

PhD: starting Session 2, 2010

Year	Sessions enrolled	Written submissions	Oral presentations	Meetings of supervisory panel
1	1	Introductory proposal within 4 months of enrolment		
	2	Annual Progress review, May 2011	Research seminar Jun 2011	Jun 2011
2	3			
	4	Annual Progress review with major project review May 2012	Research seminar Jun 2012	Jun 2012
3	5	Annual Progress review May 2013		
	6		Research seminar Jun 2013	Jun 2013
	7-8	Submit thesis 3-4 years	Exit seminar within 3 months of thesis submission	

MSC: starting Session 1, 2010

Year	Sessions enrolled	Written submissions	Oral presentations	Meetings of supervisory panel
1	1	Introductory proposal within 4 months of enrolment		
	2	Annual Progress review, Oct 2010	Research seminar Nov 2010	Nov 2010
2	3			
	4	Annual Progress review Oct 2011 Submit thesis 1.5-2 years	Research seminar Nov 2011	Nov 2011

MSC: starting Session 2, 2010

Year	Sessions enrolled	Written submissions	Oral presentations	Meetings of supervisory panel
1	1	Introductory proposal within 4 months of enrolment		
	2	Annual progress review May 2011	Research seminar Jun 2011	May 2011
2	3			
	4	Annual progress review May 2012 Submit thesis 1.5-2 years	Research seminar Jun 2012	May 2012

MPhil: starting Session 1, 2010

Year	Sessions enrolled	Written submissions	Oral presentations	Meetings of supervisory panel
1	1	Introductory proposal within 4 months of enrolment		
	2	Annual progress review, Oct 2010	Research seminar Nov 2010	Nov 2010
2	3	Submit thesis 1.5 years		

MPhil: starting Session 2, 2010

Year	Sessions enrolled	Written submissions	Oral presentations	Meetings of supervisory panel
1	1	Introductory proposal within 4 months of enrolment		
	2	Annual progress review, May 2011	Research seminar Jun 2011	Jun 2011
2	3	Submit thesis, 1.5 years		

RESOURCES

E&ERC website: www.eerc.unsw.edu.au

E&ERC Education Subcommittee

The development of the Graduate Program in Evolution & Ecology is the responsibility of the Education subcommittee of the E&ERC. In 2009, the committee comprises: Dr Stephen Bonser (Deputy Director/Education), A/Prof. Peter Banks, Dr Alistair Poore, Dr Mark Tanaka.

A/Prof Peter Banks and Dr John Triantafilis are the postgraduate coordinators for the School of Biological, Earth and Environmental Sciences, and a member on Science Faculty higher degree committee. They are available to help with issues of enrolment, reporting requirements and completion.

Further information on postgraduate study at UNSW

Graduate Research School. The GRS is the central administrative and support unit for all higher degree research students and their supervisors at UNSW. Their website has extensive information on postgraduate policies, available scholarships, forms that you will need, and resources available for students at UNSW.

Web: www.grs.unsw.edu.au

Email: enquiries.grs@unsw.edu.au

Ph: 9385 5500/5502

School of Biological, Earth and Environmental Sciences

Web: www.bees.unsw.edu.au/current/pgradcurrent.html

Postgraduate coordinator: A/Prof. Peter Banks, Ph: 9385 2066, Email: p.banks@unsw.edu.au

School of Biotechnology and Biomolecular Sciences

Web: <http://www.babs.unsw.edu.au/futurestudents.php>

Postgraduate coordinator: A/Prof Peter White, Ph: 9385 3780, Email: p.white@unsw.edu.au

School of Mathematics and Statistics

Web: <http://www.maths.unsw.edu.au/students/current/currenthome.html>

Postgraduate coordinator: Dr Thanh Tran, Ph: 9385 7041, Email: re.MathsStats@unsw.edu.au

Travel and research grants available for students

Contact your school and supervisor for information on financial support for attending conferences. The Graduate Research School also supports conference travel for postgraduate students – check their website for due dates and application forms.

A wide variety of research grants are available from scientific societies and other agencies to support small research projects and scientific travel. E&ERC students are strongly encouraged to apply for these to gain experience in grant writing, support their project and strengthen their CVs.

Below is a partial list of such grants. Please email Stephen Bonser (s.bonser@unsw.edu.au) if you are aware of others suitable for our discipline.

Animal Behaviour Society

- Student Research Grants - <http://www.animalbehavior.org/ABSGrants08/abs-research-grant-information/abs-student-research-grants-2008>

Australasian Society for Phycology and Aquatic Botany

- Conference Travel Support, International Travel Support - http://members.iinet.net.au/~philip.orr/ASPAB_new_site/

Australian Federation of University Women

- <http://www.afuw.org.au/ScholarshipsFS.htm>

Australian Geographic

- http://editorial.australiangeographic.com.au/society/index_society.aspx

Australian Marine Science Association

- AMSA International Conference Prize for Students - <https://www.amsa.asn.au/students/international.php>
- Annual Conference - Student Travel Subsidy - <https://www.amsa.asn.au/students/travel.php>

Ecological Society of Australia

- Student Travel Grants — Conference attendance - <http://www.ecolsoc.org.au/What%20we%20do/Prizes/StudentTravelGrants.html>
- Jill Landsberg Trust INAUGURAL STUDENT GRANT - <http://www.ecolsoc.org.au/What%20we%20do/Endowments.html>

Australian Society for Fish Biology

- Student International Travel Scholarship, Conference Awards and Bursaries, Research Support - <http://www.asfb.org.au/students/index.htm>

Genetics Society of Australia

- Smith White Travel Award - <http://www.genetics.org.au/SmithWhite.php>
- Student Travel awards - <http://gsa2007.org/awards>
- D. G. Catcheside Prize for doctoral research - <http://www.genetics.org.au/Catcheside.php>

Linnean Society of New South Wales

- The Joyce W. Vickery Scientific Research Fund - <http://www.acay.com.au/~linnsoc/grants.html#THE%20JOYCE%20W.%20VICKERY%20SCIENTIFIC%20RESEARCH%20FUND>

Project AWARE (marine conservation)

- <http://www.projectaware.org/americas/english/grants.asp>

Royal Zoological Society of New South Wales

- Ethel Mary Read Research Grants - <http://www.rznsnw.org.au/EMRGrants.htm>

SeaWorld Research and Rescue Foundation

- http://www.seaworld.com.au/research_rescue/research_rescue.cfm

Sydney Aquarium Conservation Foundation

- Research Grants - <http://www.sydneyaquarium.com.au/NonProfit/NON050.asp>

Occupational Health & Safety

Students are required to conform to UNSW policies on occupational health & safety. Further information can be obtained on the OH&S pages of your supervisors' school.

School of Biological, Earth and Environmental Sciences:

www.bees.unsw.edu.au/ohs/indexohs.html

School of Biotechnology and Biomolecular Sciences

www.babs.unsw.edu.au/current/ohs/index_ohs.html

School of Mathematics and Statistics

www.maths.unsw.edu.au/school/ohs/ohshome.html

Licensing requirements

It is the responsibility of the student and supervisor to ensure that all research conducted is approved by the relevant collection permits and animal ethics committees. Information on the application process for animal ethics is at

<http://www.gmo.unsw.edu.au/Ethics/AnimalEthics/AnimalEthicsApplicationProcess.html>

Grievance procedure and complaints

The Graduate Research School outlines the procedure for handling grievances. See the policy at www.policy.unsw.edu.au/policy/procedure_researchstudents_grievance.pdf

Academic honesty and plagiarism

Students must be aware of UNSW policies that relate to plagiarism and academic honesty. See further details at: www.lc.unsw.edu.au/plagiarism/link.html