

## **An invitation to Honours Genetics**

We invite you to be part of the 2011 Honours Genetics class.

Honours Genetics at The University of Adelaide offers a challenging and enjoyable course that:

- introduces you to genetic research through your own research project,
- extends your knowledge of genetics through reading and discussion,
- encourages critical, independent and imaginative thinking and
- gives you experience in scientific communication with a balance between tasks involving scientific writing and speaking.

Honours Genetics students may undertake their research project within the Discipline of Genetics laboratories in the Molecular Life Sciences Building, or in the laboratories of affiliate members of staff at the Women's and Children's Hospital, The Institute of Medical and Veterinary Science, CSIRO, The Australian Wine Research Institute and at the Evolutionary Biology Unit of the South Australian Museum.

Our Honours students undertake a wide variety of studies, including the molecular basis of gene function, human genetics, evolutionary genetics, developmental genetics, biotechnology and the conservation genetics of Australian species - truly reflecting the broad significance of genetics in the biological sciences.

### **A valuable degree**

Honours Genetics is a qualification that can lead to a higher degree, such as a PhD, and to an exciting career in scientific research and leadership. It is important to realise, however, that an Honours degree has broader significance than simply being a path to a PhD. It is a qualification that is much sought after by employers looking for career professionals. Among Honours genetics graduates from the last few years, for example, you will find current PhD students, professional scientists at hospitals and CSIRO divisions and the IMVS, a staff member at the computer firm EDS, professional scientists at the State Forensic Science Centre, students enrolled in postgraduate medicine, and in the teaching profession.

### **A supportive environment**

Members of staff in Genetics offer a highly supportive environment for Honours students because they provide the opportunity to work closely within a relatively small and highly interactive group, offering an environment that is strong in both youthful enthusiasm and scientific and technological experience. Therefore you will be both practically and intellectually well supported in your efforts and can expect to reach your full potential.

### **An enjoyable and productive experience**

A measure of our strength in the Genetics Discipline within the School of Molecular and Biomedical Science is the quality of our publications. In the last several years, publications have appeared in top genetics and interdisciplinary science journals including: *Nature*, *Science*, *Genetics*, *Genes & Development*, *Proc. Natl. Acad. Sci. (USA)*, *Development*, *Nature Genetics*, *Molecular Biology and*

*Evolution, Chromosome Research, Human Molecular Genetics, Genomics, European Journal of Human Genetics, Molecular Cell, Clinical Genetics, Lancet, American Journal of Human Genetics, Genome, Chromosoma, Trends in Genetics, Molecular and Cellular Biology, Nature Reviews Genetics, PLoS Genetics and Plant Physiology.*

### **What you should do to prepare for entry to the honours genetics course**

We suggest that you read the projects listed on the School web site and/or discuss possibilities with a range of potential supervisors. It is usual for a student intending to do Honours to have obtained twelve units in courses in Genetics at Level III and to have achieved a satisfactory standard of work, preferably at Credit level or above. However, the Discipline will consider any student with an appropriate background. When you have considered the projects, list them in order of preference on the application form and submit it to the Faculty of Sciences (see below).

### **The contents of Honours Genetics**

Full details about Honours Genetics 2011 are still being discussed. A booklet setting out all the necessary information will be posted to those accepted into the course, early in the new year. However, the following provisional course outline is given to assist you in reaching a decision.

As an Honours student in genetics you will be expected to give your full time (commencing on the first Monday of February 2011) to a course of study and research work under the supervision of a member or affiliate member of staff. The largest component of the Honours course is the Research Project. Details of your research work will be kept in a laboratory notebook and summarised in a research **Dossier** that will be maintained and updated throughout the year and will be assessed. Discussions about the Dossier will inform your assessment group of 3 staff of your progress and provide you with additional assistance and comment. Finally the Dossier will be modified into a **Thesis** format that you will present for discussion and assessment by the same group of three staff. We have devised this system to provide maximum possible support for students in their research efforts. Your research will also form the basis of two seminars, one early in the year (nonassessed), in which you will outline your proposed research, and one at the end of the year, in which you will present and discuss your research to members of the Discipline of Genetics. About 70% of the marks for the course will be based on research-related activities.

The other components of the course are designed to develop and test your critical ability, originality and ability to integrate and communicate information and ideas. Early in the course, you will present a **Literature Review** for your research project. This will contain a critical appraisal of the literature in the area of your project and will include your identification of questions, problems or opportunities. A major activity will be a **Frontiers in Genetics Proposal** that you will deal with a topic at the cutting edge of Genetics research.

These and other activities will be detailed in the Honours genetics booklet for 2011. The Honours Genetics Handbook for 2010 can be used as a guide, and it is available on the School WEB site:

[http://www.adelaide.edu.au/mbs/prospective/honours/projects/genetics/Genetics\\_Honours\\_handbook\\_2008.pdf](http://www.adelaide.edu.au/mbs/prospective/honours/projects/genetics/Genetics_Honours_handbook_2008.pdf).

During the Honours year you will have the opportunity to read widely in the scientific literature, not just in the area of your **Research Project** and other assignments. You will also attend and participate in all **Discipline seminars** and **Journal club** sessions.

### **The Honours Genetics research project**

By the end of your third undergraduate year you will have been exposed to many different areas of the Discipline and to a variety of techniques currently used for genetic research. However, it is very difficult for a third year student to develop independently a project that is appropriate for Honours. To help you choose a program of research, we have suggested some projects that could be undertaken. These could be also modified, in discussion between you and a potential supervisor, to produce an Honours research project. If you have your own ideas, we strongly encourage you to discuss any of these with potential supervisors.

### **Application for Honours Genetics**

The application process for Honours is detailed at:

<http://www.adelaide.edu.au/mbs/prospective/honours/applying.html> and the expression of interest forms are at:

<http://www.sciences.adelaide.edu.au/honours/eoi/>

You will be informed about the outcome of your application as soon as possible after the deadline (29 October 2010) and after the results of the third year subjects are finalised. You should note that there are usually 2 or 3 rounds of offers. If you have any general questions about Honours Genetics 2009, you can discuss them with the Honours Genetics coordinator, Professor Jeremy Timmis, Room 2.33, Molecular Life Sciences Building, Phone: 8303 4661, Email: [jeremy.timmis@adelaide.edu.au](mailto:jeremy.timmis@adelaide.edu.au).