

Colgate Australian Clinical Dental Research Centre

The Colgate Australian Clinical Dental Research Centre (CACDRC) is a unique entity in Australian dentistry.

It is a world class research facility with clinical facilities backed up with considerable laboratory facilities.

The Centre receives significant support from its corporate sponsor Colgate Oral Care. This support, together with other funding sources from industry, government and the profession provides the necessary funds to maintain its principal activities.

The overall objectives of the Centre are:

- To encourage collaborative research between CACDRC and groups from not only within the University, but also with groups interstate and overseas.
- Adapt leading technologies derived from basic sciences, and apply them to clinical research.
- To encourage practicing dentists to participate in clinical and laboratory dental research;
- To liaise with the dental industry.

The Centre is part of the Centre for Orofacial Research and Learning (CORAL) and associated with the Stem Cell Research Centre.

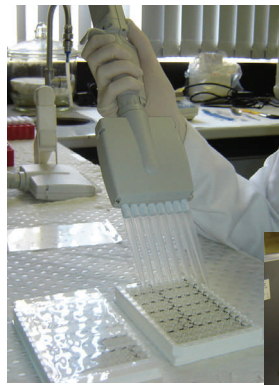
Honours in the CACDRC

The CACDRC within the School of Dentistry offers an honours course. Students from Health Science, Science, Dentistry, and Arts may undertake a course of study leading to an honours degree (BScDentHons).

Aims of the course

- To encourage and engage interests in scientific research
- To provide mentored research training in areas of biological and materials research.

Research areas include the participation in currently funded projects in stem cell use for tissue growth and repair, and includes training in emerging technologies such as proteomics and microarray.



Need more information?

Visit our websites at:

<http://www.health.adelaide.edu.au/dentistry/colgate/>

http://www.health.adelaide.edu.au/dentistry/oral_disease/

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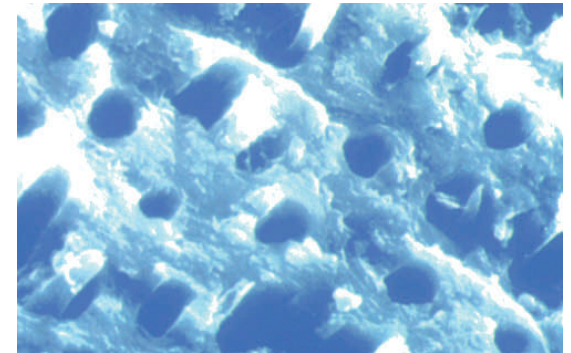
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Colgate AUSTRALIAN CLINICAL
DENTAL RESEARCH CENTRE

Honours Degrees

Colgate Australian Clinical Dental Research Centre and affiliates



THE UNIVERSITY
OF ADELAIDE
AUSTRALIA

Faculty of Health Sciences
School of Dentistry

Entry requirements

You will need to have a good university academic record but that does not mean that you will only be accepted if you have gained distinctions and credits. Apart from dental students and dentists, graduates of other courses eg BSc, BHSc and BA are also strongly encouraged to enrol.

A decision on your overall suitability for an honours course rests initially with your potential supervisor, then acceptance is approved officially by the School of Dentistry. Initially, students are encouraged to approach the Centre to discuss their research interests so potential supervisors can be approached.

What's involved in a typical program?

Programs are tailored to meet the needs of the individual and includes the following components:

Research Project and Thesis

This major component of the program provides candidates with an opportunity to explore an area of research in some depth. You will be expected to read widely around the chosen topic and to critically evaluate the existing literature. With your supervisor you will formulate aims and specific hypotheses relevant to your research project and then develop appropriate methods to test the hypotheses. This will generally require you to become proficient in the use of various pieces of equipment, apply specific techniques and analyse interpret your results. At the completion of your project, you will be expected to submit a thesis summarising your research which will include a comprehensive literature review.

Essays

You will be expected to prepare two essays as part of your Honours course. These will normally be on topics that are relevant to the research project.

Seminars

Honours candidates are usually expected to present at least one seminar relating to their studies as part of the Centre's seminar program.

Didactic Coursework

All honours students and other postgraduates in the Dental School are required to complete a structured program involving Research Methods and Ethics, as well as topics in basic and applied sciences. Additional courses in relevant areas for example cell biology, molecular biology, proteomics or microbiology may be taken as required.

Project topics

Stem cell research

- Isolation of adult mesenchymal stem cells
- Utilisation of stem cells for tissue regeneration
- The stem cell project has received significant funding from the NH&MRC(2007-2009)

Proteomics/microarray

- Proteomic assessment of periodontal cells (a major component of the stem cell project)
- Proteomic assessment of oral bacteria in health and disease
- Comparison of proteomic and microarray technologies for understanding bacterial physiology

Oral microbiology

- Growth and metabolism of oral pathogens
- Proteomic investigation of bacterial physiology and during biofilm development
- Assessment of caries risk
- The effects of various antimicrobials on oral isolates

Tissue engineering and regeneration

- Use of bioscaffolds to repair oral tissues
- Cell seeding and growth factor research

Periodontal research

- Periodontics and systemic health
- Proteomic analysis of gingival crevicular fluid as a basis for disease diagnosis
- Periodontal disease diagnostics
- Periodontal regeneration
- A project on periodontal pathology and bone loss has received significant funding from the NH&MRC (2009-2011)

Dental materials

- Dental materials testing and trials
- Microscopic evaluation of dental materials

Skills acquired

Depending on your project you could learn any of the following:

- Cell culture and isolation
- Differentiation assays
- Electron microscopy
- Flow cytometry
- Immunohistochemistry
- Materials testing
- Microarray
- Molecular biology
- Proteomics
 - 2-dimensional gel electrophoresis
 - Mass spectrometry
 - Protein identification
 - Differential expression analysis
- Software training and application
- Real-time PCR
- Small and large animal surgery

What do graduates do after honours?

Graduates could go on to the following:

- Doctoral Studies (PhD, DCLinDent)
- Research positions in laboratory and clinical research
- Biotechnology
- Sales and marketing
- Other postgraduate studies

Where is the CACDRC?

The CACDRC is located on the 2nd Floor of the Adelaide Dental Hospital. Our research facilities are located in the Adelaide Dental Hospital and Dental School. We are also affiliated with other areas of the University of Adelaide and the IMVS and utilise their research facilities.