

VISION CRC RESEARCH TRAINING

CRCs are key players in Australia's system of innovation. CRCs successfully bring research and industry together in creative and cost-effective multidisciplinary collaborations to address specific national research priorities and to develop new products and opportunities of immense value.

Employers and Government have expressed the need for graduates experienced in industry. The unique educational environment in CRCs produces such graduates, with the majority gaining employment in industry and applied research institutions.

Since 1991 some 2,500 PhD students have earned their degrees working with CRCs. One of the major advantages of PhD programs in CRCs is the involvement of the industry partners who provide the "real-world" perspective to research and development. In 2006-07, there were 560 non-university supervisors of CRC postgraduate students and since the commencement of the CRC Program, more than 3,500 CRC postgraduates have taken up employment with end-users in their sector.

Vision CRC

The Vision CRC is committed to delivering quality innovative education programs at all levels of the eyecare industry to create new industry, professional and research capacity in Australia in the vision and eyecare field. The Centre provides education and training for Australian and international postgraduate students, practitioners, and eyecare and industry personnel; both in short courses and at the certificate, diploma, degree and higher degree levels.

The Vision CRC postgraduate research program delivers accredited postgraduate research education including PhD and Masters, and graduate diploma degrees, and undergraduate teaching through the participant Universities. The Centre aims to provide a broad experience for its postgraduate students, with joint supervision between participants, industry experience, participation in national and international conferences, and relevant skills training.

Objectives

- Provide high quality research training to postgraduate scientists in vision and eyecare research, with access to postgraduate supervisors outside the higher education system to provide relevant expertise
- Provide access to high quality coursework education to meet the needs of graduates for continuing and further education
- Produce well-trained graduates of a high standard in applied research, with excellent employment opportunities, who have experience of industry/sector needs and methods, plus experience in IP management and protection, commercialisation, and project management.

Vision CRC students are involved in all areas of CRC research. Students work in a multidisciplinary research environment, with access to a range of related research areas and information from national and international Vision CRC participants and collaborators, including industry. Industry and other end-users are also involved in the supervision and review panels of students. Students are also given the opportunity to participate in industry meetings such as the major planning meetings held with CIBA Vision, and to work directly with industry in their projects.

The Vision CRC's reputation and international reach has brought many overseas students to the Centre, and currently 9 international Vision CRC students are undertaking their work in Australia. A further 20 students are undertaking their Vision CRC research projects through partner organisations such as the LV Prasad Eye Institute, India; the University of Durban-Westville, South Africa; University of Houston, USA; Anglia Polytechnic, UK; University of Miami, USA; and Wenzhou Medical College, China.

Achievements

Postgraduate researchers are important members of the research team in CRCs. In the Vision CRC, around 50 students participate in projects across all of the CRC's programs. They are productive members of the team, with 52 out of 201 refereed publications being produced by students as first authors. Students complete their theses in a timely manner, with the mean time taken for a full-time PhD being 3.97 years. Students have a strong record of achieving scholarships, and 60% of students have received support from external organisations.

The unique educational environment in CRCs produces highly trained and experienced research graduates, with the majority obtaining employment in industry and in applied research institutions. In the Vision CRC and its predecessor, the CRC for Eye Research and Technology, 35 graduates were employed in Australian research, 21 in international research, and 19 in industry.

CRC Program Objective 3: To enhance the value to Australia of graduate researchers

Centre Objectives	Performance Measures	2003-2004	2004-2005	2005-2006	2006-2007
3.1 To produce high quality graduates to build future research and industry in Australia and internationally	Postgraduate student enrolments	39	44	53	52
	Postgraduate student completions	5	7	7	12
	Refereed publications (books, chapters, refereed papers and abstracts) by postgraduate students				
	- First author	- 22	- 30	- 25	- 52
	- Other authors	- 18	- 16	- 33	- 38
	Graduates and their employment				
	- Australian research	- 4	- 8	- 11	- 12
	- International research	- 0	- 1	- 3	- 7
	- Australian industry	- 1	- 3	- 5	- 5
	- International industry	- 0	- 1	- 0	- 4

CRCERT and Vision CRC student experiences (from an Australian Optometry feature: *WHERE ARE THEY NOW?*)

Isabelle Jalbert

Original degree: OD (Doctor of Optometry), University of Montreal, Canada

Postgraduate degree: PhD “Contact lens wear and the corneal stroma”, completed 2004

Current position: Director of Clinical Research for the Institute for Eye Research

“I decided to do postgraduate study because I felt that not having one was a barrier to career advancement. I was really interested in getting the opportunity to dedicate myself full time to research of my own choosing and I believe it has furthered my options for a career in research tremendously. I am currently Director of Clinical Research for the Institute for Eye Research, Director of the Perfect Contact Lens Program for the Vision CRC and Adjunct Lecturer for the School of Optometry and Vision Science at the University of New South Wales. And I get multiple job offers every time I go overseas to a conference!

“I researched an area I was already somewhat familiar with - the effects of contact lenses on corneal physiology – but also used the opportunity to gain new specialised clinical skills such as modified optical pachometry and in vivo confocal microscopy as well as some new laboratory techniques.

“For any undergraduate thinking about postgraduate study I would say go ahead and do it. It can be really tough and lonely at times but it’s a fantastic experience overall and a great opportunity to pick up new skills, advance your career and make new links with possible future collaborators. All those skills are useful life skills no matter what your job is, even if you don’t end up working in research.”

Vicki Evans

Original degree: Bachelor of Optometry, University of New South Wales

Postgraduate degree: PhD “Modulation of tear lipocalin by phosphodiesterase inhibitors”, completed 2001

Current position: Professional Services Manager for Australia/New Zealand and Regional Head of Professional Marketing Asia Pacific, CIBA Vision,

“I really enjoyed my undergraduate degree and had always thought I might do a PhD one day. Contact lenses were my main clinical interest and I was very lucky to work with the team at the CCLRU who taught me about the world of contact lens research and clinical trials. For my PhD I wanted to combine my optometry degree with laboratory science techniques like biochemistry and microbiology. I hoped that the PhD would let me use my optometry skills in a broader way. I enjoyed working on the industry

sponsored trials of prototype silicone hydrogels while at the CCLRU so hoped that a PhD may open some doors there too.

“Postgraduate research brought me huge opportunities, starting right from when I was a student! While I was studying I was able to work part time in different styles of optometry practice and also do aid work in Southern India. One of the best things about the contact lens research field is the fantastic people in it and going to international conferences like ARVO, American Academy of Optometry and the Dry Eye Congress was great. It was a fabulous opportunity to make life long friends and learn from them. My research also gave me the opportunity to collaborate with researchers at the Vision CRC, UWS, Macquarie University Australian Proteome Analysis Facility, Royal Hospital for Women, Prince of Wales Hospital and Royal North Shore Hospital.

“When I submitted my thesis I was offered a post-doctoral position at the Department of Ophthalmology at Oxford University. This let me continue research related to my PhD and while I was there I also did occasional work for CIBA Vision UK as a contract lecturer on silicone hydrogel lenses. Oxford was a fantastic place to live and I travelled widely around the UK and Europe at every opportunity.

“A full time Professional Services job with CIBA Vision UK became available at the end of my post-doc so I moved to the beautiful city of Winchester where I lived for the next three years. The role let me combine my optometry with my interests in contact lenses, silicone hydrogel research, tear film and education. I learnt to give good presentations and still love mucking about with Powerpoint.

“My job took me all around the UK and Ireland and occasionally to Europe and the US which was fantastic. I then moved home to Australia last year into two roles with CIBA Vision - Professional Services Manager for Australia/New Zealand and Regional Head of Professional Marketing Asia Pacific.

“For prospective students I’d say begin with the end in mind. Do something you love and have an idea of how you are going to use your PhD in your career. It can be a tough process but try and finish it as quickly as possible and have as much fun as you can on the way!”

Charline Gauthier

Original degree: OD (Doctor of Optometry), University of Waterloo, Canada

Postgraduate degree: PhD “Effect of photorefractive keratectomy on the human corneal epithelium”, completed 1996

Current position: Chief Operating Officer, IntraLase Corp, Irvine, California USA

“Originally I went into postgraduate research because I thought I wanted to teach at a university. But my PhD has brought me even wider career opportunities in the ophthalmic industry. I have gained recognition as a researcher in the field of refractive surgery, and have contact and relationships with refractive surgeons worldwide.

“My first job after my PhD was the Director of Clinical Affairs in a small start-up excimer laser manufacturer in Florida in 1995. After three years in this role, I was promoted to Chief Operating Office of the company and currently have the same role in another laser company in California.

“The experience you gain through the postgraduate process is broad. I gained discipline, clinical study management skills, presentation experience, networking abilities, writing skills, and many other less tangible things. . During my PhD study period, I traveled extensively collected study data, presenting my results and attending conferences on refractive surgery. This international experience not only broadened my knowledge of the world but resulted in life-long relationships with researchers and clinicians around the world.

“I would also recommend having some work experience after your undergraduate degree prior to starting your postgraduate work. This will help you understand what area of research you should pursue for your thesis. It is so much more enjoyable if you are passionate about your topic as you will be working on it for several years!”