

Higher Degrees by Research

Graduate School

Gold Coast | Lismore | Coffs Harbour



www.scu.edu.au/graduateschool

About Southern Cross University

Bold, progressive and just 23 years of age – Southern Cross University is one of the Asia-Pacific's Top 100 Universities and one of the world's Top 50 Generation Y Universities.^{1,2}

This stellar performance sees Southern Cross ranking within the top 150 universities in the global Times Higher Education Young University Rankings and the QS World Rankings.^{3,4}

We are one of the leading destinations for students seeking a high-quality education at an Australian university. Our contemporary campuses, with purpose-built world-class facilities, are located on the east coast of Australia, at the Gold Coast in Queensland, and in Lismore and Coffs Harbour in New South Wales. All are unique regions renowned for their unparalleled natural beauty and ecological diversity, providing living laboratories for research. Our growing world-class status is reinforced by our outstanding research reputation. The Excellence in Research for Australia report has ranked Southern Cross 'at world standard or above' across 24 diverse research fields of global and national significance.⁵

We engage with the wider world utilising an ethical approach that creates careers for the future. The high-quality research experience at Southern Cross is distinctly personalised.

Here, you will be well supported in your studies by dedicated staff, many of whom are world leaders in their field. The campuses provide a safe, caring, inclusive and friendly environment that seeks to embrace students with a sense of belonging and community.

We look forward to welcoming you into our bold and progressive new generation Southern Cross research community.

¹ 2017 Times Higher Education Asia-Pacific University Rankings

² 2017 Times Higher Education Top 50 Generation Y University Rankings

³ 2017 Times Higher Education Young University Rankings

⁴ 2017 QS World University Rankings

⁵ ERA 2015 www.scu.edu.au/era

Southern Cross GeoScience

Southern Cross GeoScience specialises in multidisciplinary research that broadens our knowledge and understanding of ancient and contemporary environmental systems.

RESEARCH GROUPS INCLUDE:

- Aquatic chemical processes
- Environmental biogeochemistry and mineralogy
- Geoarchaeology and archaeometry
- Landscape hydrogeochemistry.

INSTITUTIONAL AFFILIATIONS:

- China University of Petroleum, Beijing
- Chinese Academy of Sciences
- Donghua University
- The Institute of Hydroecology, Ministry of Water Resources and Chinese Academy of Sciences.

■ DR TERRY ROSE

BScAgr(USyd),
PhD in Plant Nutrition (UWA)

- Research Fellow | Southern Cross Plant Science and Southern Cross GeoScience



Email: terry.rose@scu.edu.au

Dr Rose is an agronomist with a strong interest in the mineral nutrition of crop plants. He has a particular interest in phosphorus and developing crop cultivars with tolerance to nutrient deficiency stress.

CURRENT RESEARCH PROJECTS:

- Internal nutrient utilisation efficiency in crops – what does it really mean and can we exploit genotypic differences?
- Physiology and regulation of phosphorus loading into developing grains.
- Rhizosphere processes in lowland rice production – how do efficient genotypes acquire phosphorus?
- Agronomy and nutrition of tea tree
- Greenhouse gas emissions and mitigation options in subtropical crops (rice, sugarcane, tea tree, coffee, avocado, blueberries, bananas)
- The impact of compost and biochar on nutrient cycling and soil biology
- The impact of herbicides on soil biology
- Improving nitrogen fertiliser efficiency in the subtropics
- Organic crop production.

Centre for Coastal Biogeochemistry

The Centre undertakes research on the global change issues of nutrient over-enrichment (eutrophication), ocean acidification, climate change, greenhouse gases and hypoxia. We work in estuaries, rivers and catchments, near-shore coastal waters, mangroves, seagrasses, salt marshes, wetlands, muds, permeable sands and coral reefs. Research tools include stable isotopes, process measurements, automated instrumentation, experimental manipulations, material mass balances and ecosystem modelling and comparative studies.

INSTITUTIONAL AFFILIATIONS:

- Hohai University.



■ PROFESSOR BRADLEY EYRE

BAppSc(Hons)(Adel), PhD(QUT)

- Director, Centre for Coastal Biogeochemistry

Email: bradley.eyre@scu.edu.au

Professor Eyre is a biogeochemist with diverse research interests, that are focused on the flow of carbon and nitrogen through coastal ecosystems. Professor Eyre works on the global change issues of nutrient over-enrichment (eutrophication), climate change, ocean acidification, greenhouse gases and hypoxia.

RESEARCH TOPICS:

- Greenhouse gas emissions from mangroves, seagrasses and salt marshes
- Factors controlling denitrification, anammox and DNRA in marine sediments
- Carbon and nitrogen cycling in coastal systems.

Ecohydrology Research Group

The Ecohydrology Research Group works on all things related to groundwater and surface water hydrology, biogeochemistry, marine and freshwater chemistry, and greenhouse gas cycling. We use cutting edge instrumentation and techniques in our research including the use of natural stable and radio isotope tracers, cavity ringdown spectroscopy and gamma spectrometry.

CURRENT RESEARCH TOPICS INCLUDE:

- Groundwater-surface water exchange
- Carbon cycling and sequestration
- Coastal/ocean acidification
- Land-ocean interactions
- Water quality and pollution
- Analytical automation.



■ PROFESSOR ISAAC SANTOS

PhD(Florida State University)

- ARC Future Fellow



Email: isaac.santos@scu.edu.au

Professor Santos is an ARC Future Fellow working at the interface between coastal oceanography, hydrology and geochemistry. His research focuses on greenhouse gas cycling and the use of natural radioactive tracers to investigate submarine groundwater discharge.

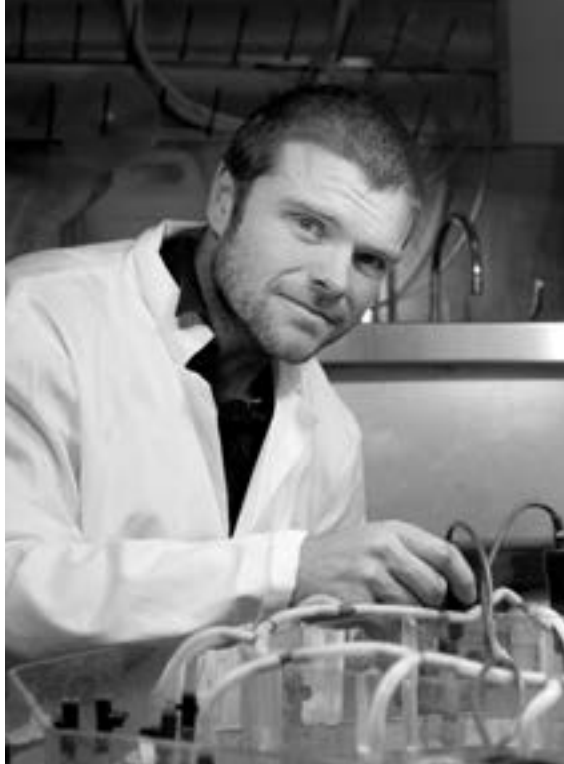
RESEARCH INTERESTS:

- Greenhouse gas cycling
- Use of natural radioactive tracers to investigate submarine groundwater discharge
- Groundwater issues and carbon cycling on the continental shelf, coastal wetlands, coral reefs, geothermal systems, estuaries, and beaches.

■ DR DAMIEN MAHER

BAppSc(Hons)(SCU),
PhD(SCU)

- Senior Lecturer and Research Scholar
- Cronin Award recipient



Email: damien.maher@scu.edu.au

Dr Maher is a ecohydrologist currently working on research funded through the Australian Research Council DECRA Fellowship. He works on various aspects of the global carbon, nutrient and hydrological cycles. He incorporates stable and natural radioisotopes into his work to characterise greenhouse gas emissions, and carbon nutrient pathways in aquatic and terrestrial environments.

Southern Cross Plant Science

Southern Cross Plant Science is a leader in research underpinning the cultivation and utilisation of plants.

CURRENT RESEARCH TOPICS INCLUDE:

- Agronomy and plant physiology focused on soil nutrition
- Bioinformatics and computational biology
- Crop, forest and native plant genomics
- Plant genetic resources and characterisation
- Epigenetics
- Genetic diversity
- Crop and model plant proteomics
- Natural product variation.

INSTITUTIONAL AFFILIATIONS:

- Chinese Academy of Agricultural Sciences
- Huazhong Agricultural University
- Zhejiang University
- Jiangnan University
- Kunming Medical University
- Nanjing Agricultural University
- Shanxi Provincial People's Hospital.

■ DR BRONWYN BARKLA

BSc in Biology (Toronto),
MSc in Botany (Toronto),
PhD in Botany (Toronto)

- Associate Professor



Email: bronwyn.barkla@scu.edu.au

Dr Barkla heads the plant biochemistry group and coordinates the postgraduate training program. She is a member of the ARC College of Experts. Her research interests include studying the role of membrane proteins and lipids in abiotic stress tolerance in crop and model plants and she is currently using 'omics' approaches to further understand this area.

CURRENT RESEARCH PROJECTS:

- Role and regulation of membrane proteins, with particular emphasis on transport proteins, in salt and heavy metal tolerance in plants.
- Research using 'omics' approaches has been undertaken to gain further insight into the role of the specialised trichomes called epidermal bladder cells which are found on the leaves and stems of the ice plant, *mesembryanthemum crystallinum*.
- Fractionation of proteins to reduce sample complexity using non-traditional approaches including Free Flow Electrophoresis.

Engineering

Engineering at Southern Cross University is a part of the School of Environment, Science and Engineering. The School offers a dynamic and contemporary learning experience in state-of-the-art facilities. Our academic staff bring extensive technical and practical experiences into their teaching and our research programs are making an impact in domestic and international arenas.

INSTITUTIONAL AFFILIATIONS:

- National Cheng Kung University
- Country Garden Group
- Harbin Institute of Technology
- Xiamen University
- University of Chinese Academy of Sciences.

PROFESSOR SCOTT SMITH

BE(Hons)(UNSW), PhD(UNSW),
CPEng, RPEQ, FIEAust, FASCE,
FHKIE, FIIFC

Foundation Professor of
Engineering | Dean of Engineering,
Southern Cross University

Overseas Doctoral
Supervisor/Co-supervisor,
Harbin Institute of Technology
Editor, *Construction and Building
Materials* (Elsevier)

Senior Vice President,
International Institute for FRP in
Construction (IIFC)

Contract Professor (2011-2014),
Harbin Institute of Technology

Visiting Professor (2011),
Tsinghua University

Assistant Professor to Associate
Professor (2007-2012),
The University of Hong Kong

Email: scott.smith@scu.edu.au

Professor Smith's research interests include the application of advanced materials (e.g. fibre-reinforced polymer [FRP] composites) for the repair and strengthening of existing concrete, metallic and timber infrastructure; sustainable development of the built environment; and engineering education.



Professor Smith successfully bid for a grant from the National Science Foundation of China, for a project led by Professor Zhenyu Wang of the Harbin Institute of Technology on the testing, analysis and design of the structural seismic performance of infilled reinforced concrete structures retrofitted by FRP.

CURRENT RESEARCH TOPICS:

- Smart materials-based structural health monitoring
- Piezoelectric-based micro-energy harvesting.



DR RICARDO VASQUEZ PADILLA

BS(ME), MSc(ME),
PhD(University of South Florida)

- Senior Lecturer and Course Coordinator, Bachelor of Engineering (Honours) in Mechanical Engineering

Email: ricardo.vasquezpadilla@scu.edu.au

Dr Vasquez Padilla's research interests include modelling and experimentation of advanced power blocks operating with different heat sources, Concentrated Solar Thermal (CST), hybrid renewable energy systems and applications of renewable energy for heating, cooling and desalination.

CURRENT RESEARCH TOPICS:

- Optimisation and analysis of gas receivers
- Energy harvesting
- Control strategies for solar towers
- Design of a solar bio-reactor for waste to energy production.



■ PROFESSOR ANDREW ROSE

BE Environmental (Hons)(UNSW),
BSc Mathematics (UNSW),
PhD Environmental Engineering

- Professor of Environmental Engineering | Research Scientist, Southern Cross GeoScience

Email: andrew.rose@scu.edu.au

Dr Rose's primary research field is aquatic chemistry, with a focus on understanding detailed mechanisms of biogeochemical processes in natural and engineered aquatic systems.

CURRENT RESEARCH PROJECTS:

- Chemical speciation of iron in coastal seawater
- How marine microorganisms manipulate iron chemistry in their extracellular environment
- Mechanisms of mineral formation in aquatic environments
- Using iron minerals to recover phosphorus from wastewater
- Chemistry of reactive oxygen species in natural waters.

Law

The School of Law and Justice is a leading national and international centre for scholarly research which is proudly theoretical, critical, cultural and contextual in its nature and perspectives. We boast renowned scholars in fields as diverse as law and the humanities, popular culture, property theory, law and race, the rights of nature, climate change and adaptation, international human rights, the human right to water, the legal histories of Hong Kong, and Indigenous jurisprudence.

POTENTIAL RESEARCH PROJECTS:

- Law, literature and culture
- Legal history
- Colonial influence in China
- Law reform in Hong Kong
- Politics of the Chinese diaspora
- Mediation and alternative dispute resolution.

■ PROFESSOR WILLIAM MACNEIL

BA(Toronto), MA(Toronto),
LLB(Dalhousie), LLM(University
College London), JSD(Columbia)

- Dean of Law | Head of School of Law and Justice | The Honourable John Dowd Chair in Law
- Lecturer | The University of Hong Kong 1989-1998
- Visiting scholar | Hong Kong Shue Yan University



Email: william.macneil@scu.edu.au

A scholar of jurisprudence and cultural legal studies, Professor MacNeil is the author of *Lex Populi: The Jurisprudence of Popular Culture* (Stanford, 2007) and *Novel Judgements: Legal Theory as Fiction* (Routledge, 2012).

AREAS OF SCHOLARSHIP:

- Jurisprudence, canonical and contemporary
- Law and popular culture
- Law and literature
- Law and psychoanalysis
- Theories of rights.

■ DR ROHAN PRICE

BA, LLB(UTAS), LLM(UTAS),
DPhil(UNE)

- Lecturer | City University of Hong Kong (2008-2010)
- Visiting scholar | Shandong University and Dalian Maritime University

Email: rohan.price@scu.edu.au

PHD SUPERVISION AREAS:

Human right to respiratory health;
labour activism and Confucianism;
Chinese immigration law and policy;
property law; legal history.

DR PRICE'S CHINESE JOURNAL CO-AUTHORS INCLUDE:

- Professor Will Shen (Dean, Shandong University Faculty of Law),
- Associate Professor John Ho (City University of Hong Kong),
- Associate Professor Lap Ah Tse (Head, Division of Occupational and Environmental Health, Chinese University of Hong Kong),
- Her Honour Justice Mengmeng Zhang (People's Intermediate Court, Beijing) and
- Professor Guobin Zhu (Director of City University Press, Hong Kong).

His work has appeared in *China: An International Journal*, *Singapore Journal of Legal Studies*, *Columbia Journal of Asian Law*, the *China-EU Law Journal*, *Singapore Law Review* and *Hong Kong Lawyer*.

PUBLICATIONS INCLUDE:

Reading Colonies: Property and Control of the British Far East (City University of Hong Kong Press, 2016); *The Employment Laws of Hong Kong and China* (Lexus Nexus, Hong Kong, 2013).



Business Administration

School of Business and Tourism

The School of Business and Tourism has a vibrant and active research culture with research strengths in:

- Tourism
- Information Technology
- Business and Management.

INSTITUTIONAL AFFILIATIONS:

- Huazhong University of Science and Technology.

■ ASSOCIATE PROFESSOR MICHAEL KORTT

BEd(Hons)(La Trobe),
MS (Arizona), PhD(UNE)

- Associate Professor



Email: michael.kortt@scu.edu.au

Associate Professor Kortt worked in the government sector as a research manager for the Department of Veterans' Affairs, the Department of Social Security, and the Department of Health. He currently has 65 scholarly outputs, which include over 55 refereed journal articles, book chapters and two research books. His publications have appeared in *Administration & Society*, *Australian Journal of Political Science*, *Australian Journal of Public Administration*, *Economic Record*, *Education + Training*, *Journal of Happiness Studies*, *Local Government Studies*, *Social Indicators Research*, and *Tourism Analysis*.

CURRENT RESEARCH PROJECTS:

- Public administration
- Education economics
- Tourism economics
- Economics of religion.

■ ASSOCIATE PROFESSOR KEVIN MARKWELL

BAHons(Newcastle),
BEdSt(Newcastle),
MA(Newcastle),
PhD(Newcastle)

- Associate Professor



Email: kevin.markwell@scu.edu.au

Associate Professor Kevin Markwell is an internationally recognised scholar in the social construction of the tourist experience, in particular relating to ecotourism, sustainable tourism and animal-tourism relationships. He uses a predominantly qualitative research approach and uses novel methods such as photo-documentation and analysis and netnography. He has produced a substantial body of work including two scholarly books; two edited books; 20 book chapters; 33 refereed journal articles; and has attracted external funding.

CURRENT RESEARCH TOPICS:

- Ecotourism and sustainable tourism
- Animal-tourism relationships in tourism.

Sports Science and Psychology

School of Health and Human Sciences

Researchers from the disciplines of Psychology and Sport and Exercise Science are undertaking cutting-edge research in areas of exercise physiology, biomechanics, strength and conditioning, motor control and motor learning, sport and exercise psychology, and exercise interventions for chronic diseases (clinical exercise physiology, exercise rehabilitation). We also have research collaborations in other areas of health science with sports industry and other institutions in Australia and overseas including Chengdu Sport University, Tianjin University of Sport and Guangzhou Sport University in China.

The School of Health and Human Sciences has hosted many visiting scholars and supervised students from China who have successfully completed their research degrees. Staff also co-supervise Higher Degrees Research (HDR) students with partner universities in China. We are eager to extend this collaboration and welcome new HDR students from China.

INSTITUTIONAL AFFILIATIONS:

- Chengdu Sport University
- Tianjin University of Sport
- Guangzhou Sport University
- Beijing Sport University.

■ **PROFESSOR
SHI
ZHOU**

MEd(BeijingInstPhysEd),
PhD(Melb)



Email: shi.zhou@scu.edu.au

Professor Shi Zhou is an exercise scientist and has been lecturing at Southern Cross University since 1991.

CURRENT RESEARCH TOPICS:

- Development of a national fitness survey
- Exercise interventions for chronic diseases
- Hypoxia intervention for diabetes
- Motor control and motor learning: Assessment of perceptual-motor skill in football
- Neuromuscular responses and adaptations to exercise and training.

■ **PROFESSOR
PETER
HASSMEN**

BSc Psychology
(Stockholm University),
PhD(Stockholm University)



Email: peter.hassmen@scu.edu.au

RESEARCH INTERESTS:

- Sport and exercise psychology
- Sport performance
- Mental health in elite sport
- Burnout
- Overtraining syndrome
- Motivational climate
- Team cohesion
- Ratings of perceived exertion.

CURRENT RESEARCH TOPICS:

- Mental health in elite sport
- Resilience and mental toughness in elite athletes
- Treating major depression with physical activity.

Graduate School

Southern Cross University offers a suite of research degrees, including Masters, PhD (Doctor of Philosophy) and Professional Doctorates, through the University's Graduate School. A dedicated team supports research candidates throughout their studies.

	COURSE	DURATION	LOCATION	CRICOS
Southern Cross Plant Science	Master of Science (Plant Science)	2 years	Lismore	077723F
	Doctor of Philosophy (Plant Science)	4 years	Lismore	077724E
Southern Cross Geoscience	Master of Science (Geoscience)	2 years	Lismore	077597G
	Doctor of Philosophy (Geoscience)	4 years	Lismore	077598F
School of Environment, Science and Engineering	Master of Science (Environmental Science and Management)	2 years	Lismore, Coffs Harbour	051066D
	Doctor of Philosophy (Environmental Science and Management)	4 years	Lismore, National Marine Science Centre	016172D
	Master of Science (Engineering)	2 years	Lismore	095715A
	Doctor of Philosophy (Engineering)	4 years	Lismore	095714B
School of Law and Justice	Master of Laws <i>Research</i>	2 years	Lismore	051063G
	Doctor of Philosophy (Law)	4 years	Lismore, Gold Coast	016197F
School of Health and Human Sciences	Master of Science (Health Science)	2 years	Lismore	059882G
	Doctor of Philosophy (Health Science)	4 years	Lismore	016171E
School of Business and Tourism	Master of Business <i>Research</i>	2 years	Gold Coast, Lismore	016179G
	Doctor of Philosophy (Business)	4 years	Gold Coast, Coffs Harbour	082683M
	Doctor of Philosophy (Tourism)	4 years	Gold Coast, Lismore, Coffs Harbour	027010J
	Doctor of Business Administration	3 years	Gold Coast	064045B
School of Arts and Social Sciences	Master of Arts	2 years	Lismore	051065E
	Doctor of Philosophy (Humanities)	4 years	Lismore	016167A
School of Education	Doctor of Philosophy (Education)	4 years	Gold Coast, Lismore	016170F
Gnibi College of Indigenous Australian Peoples	Doctor of Philosophy (Indigenous Studies)	4 years	Lismore	039927J
	Doctor of Indigenous Philosophies	3 years	Lismore	088054C

For information about research or applying to do a research degree at Southern Cross University visit: www.scu.edu.au/graduateschool

How to apply

1.

Check you meet the entry requirements.

Review the award rules for your chosen degree to make sure you have the relevant qualifications or experience; and English language comparable to Academic IELTS of 6.5 with no band less than 6.0.

2.

Find a supervisor.

Before you start your application you will need to make contact with a prospective supervisor who has the relevant experience to supervise you and is willing to be nominated as your principal supervisor.

3.

Complete the online application form available at:

www.scu.edu.au/graduateschool

4.

Contact

hdrapplication@scu.edu.au

if you require assistance.

DISCLAIMER:

The information in this brochure was correct at time of publishing (November 2017). The brochure is intended for international students wanting to study in Australia. All University courses are subject to change by the University and the information provided in this brochure should be used as a guide only. To the extent permitted by law, Southern Cross University excludes all liability arising from the use of, or reliance on, the information in this brochure.

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