

**EAL PhD Scholarships April 2018**

	<b>Proposed Projects</b>	<b>Suggested SCU supervisors</b>	<b>Suggested SCU supervisor email address</b>
Topic 1	Acid resistant injection grouts development for the stabilisation of mining waste-rock dumps	Associate Professor Malcolm Clark	<a href="mailto:malcolm.clark@scu.edu.au">malcolm.clark@scu.edu.au</a>
Topic 2	Micro-nutrient slow release fertilisers using microbial oxalate breakdown pathways	Associate Professor Malcolm Clark	<a href="mailto:malcolm.clark@scu.edu.au">malcolm.clark@scu.edu.au</a>
Topic 3	Toxic trace-metal immobilisations, effects of phosphate additions on plant uptake	Associate Professor Malcolm Clark	<a href="mailto:malcolm.clark@scu.edu.au">malcolm.clark@scu.edu.au</a>
Topic 4	Development of marine concrete that reduces environmental impacts of ocean acidification	Professor Brendan Kelaher, Professor Scott Smith, Melinda Coleman (DPI)	<a href="mailto:brendan.kelaher@scu.edu.au">brendan.kelaher@scu.edu.au</a>
Topic 5	Is groundwater the missing nutrient source to the Great Barrier Reef	Dr Douglas Tait	<a href="mailto:douglas.tait@scu.edu.au">douglas.tait@scu.edu.au</a>
Topic 6	Assessing the local, regional and global effect of floods on greenhouse gas emissions	Associate Professor Damien Maher and Professor Isaac Santos	<a href="mailto:damien.maher@scu.edu.au">damien.maher@scu.edu.au</a>
Topic 7	Determining the environmental footprint of unconventional gas production	Associate Professor Damien Maher and Dr Douglas Tait	<a href="mailto:damien.maher@scu.edu.au">damien.maher@scu.edu.au</a>
Topic 8	Biogeochemistry projects are available in the areas of ocean acidification, greenhouse gases, eutrophication and climate change working in estuaries, coral reefs, mangroves, seagrasses and rivers	Professor Bradley Eyre	<a href="mailto:bradley.eyre@scu.edu.au">bradley.eyre@scu.edu.au</a>
Topic 9	Mangrove forests in future climates: Are essential ecosystem functions (carbon storage and nutrient retention) at risk?	Dr Joanne Oakes and Dr Naomi Wells	<a href="mailto:joanne.oakes@scu.edu.au">joanne.oakes@scu.edu.au</a>
Topic 10	Modelling the accumulation and toxicity of anthropogenic contaminants in the estuarine food web	Professor Peter Harrison and Dr Daniele Cagnazzi	<a href="mailto:peter.harrison@scu.edu.au">peter.harrison@scu.edu.au</a>
Topic 11	Development of a Low-cost Autonomous Weeding Robot for Organic Agricultural Farming	Professor Scott Smith, Dr Habib Habibullah and Dr Ahmed Thabet,	<a href="mailto:scott.smith@scu.edu.au">scott.smith@scu.edu.au</a>
Topic 12	Harnessing the diversity of modified trichomes from halophytes to gain insight into salt tolerance.	Associate Professor Bronwyn Barkla	<a href="mailto:bronwyn.barkla@scu.edu.au">bronwyn.barkla@scu.edu.au</a>
Topic 13	Respiration of new and old carbon by marine phytoplankton	Dr Matheus C. Carvalho	<a href="mailto:matheus.carvalhodecarvalho@scu.edu.au">matheus.carvalhodecarvalho@scu.edu.au</a>
Topic 14	Electrokinetic Dewatering, decontamination and consolidation of deposited coal mine tailings	Dr Mona Malekzadeh and Associate Professor Malcolm Clark	<a href="mailto:mona.malekzadeh@scu.edu.au">mona.malekzadeh@scu.edu.au</a>
Topic 15	Assessing antimony and arsenic contamination and transport in a mine-tailings contaminated river catchment	Professor Scott Johnston	<a href="mailto:scott.johnston@scu.edu.au">scott.johnston@scu.edu.au</a>
Topic 16	Improved flood and drought records for northern New South Wales through palaeodata	Professor Anja Scheffers & Associate Professor Malcolm Clark	<a href="mailto:anja.scheffers@scu.edu.au">anja.scheffers@scu.edu.au</a>
Topic 17	Design of a solar bio-reactor for waste to energy production through thermal hydrolysis of organic waste	Professor Andrew Rose, Dr Ricardo Vasquez Padilla and Associate Professor Terry Rose	<a href="mailto:andrew.rose@scu.edu.au">andrew.rose@scu.edu.au</a>
Topic 18	Mitigating agricultural nitrogen runoff during floods	Professor Isaac Santos	<a href="mailto:isaac.santos@scu.edu.au">isaac.santos@scu.edu.au</a>
Topic 19	Biogeochemical techniques to evaluate the ability of biological management techniques to regenerate degraded sugarcane producing soils in the Great Barrier Reef catchment	Associate Professor Terry Rose & Dr Naomi Wells	<a href="mailto:terry.rose@scu.edu.au">terry.rose@scu.edu.au</a>
Topic 20	Tropical Indian Ocean Climate variability over the last 500 years: The past is a window into the future	Dr Sander Scheffers & Dr Kai Schulz	<a href="mailto:sander.scheffers@scu.edu.au">sander.scheffers@scu.edu.au</a>
Topic 21	Investigating the nature of growth bands in crustacean gastric mill ossicles using light and electron microscopy and in-vivo fluorochrome staining	Associate Professor Daniel Bucher & Associate Professor Bronwyn Barkla	<a href="mailto:daniel.bucher@scu.edu.au">daniel.bucher@scu.edu.au</a>
Topic 22	Assessing coral reef health by precise calcium measurements in seawater	Dr Kai Schulz & Dr Renaud Joannes-Boyau	<a href="mailto:kai.schulz@scu.edu.au">kai.schulz@scu.edu.au</a>
Topic 23	Redox in the rhizosphere: a new paradigm for phosphorus acquisition by crops	Associate Professor Terry Rose and Professor Andrew Rose	<a href="mailto:terry.rose@scu.edu.au">terry.rose@scu.edu.au</a>
Topic 24	Chemical residues in seafood and implications for high quality marine oils	Associate Professor Kirsten Benkendorff	<a href="mailto:kirsten.benkendorff@scu.edu.au">kirsten.benkendorff@scu.edu.au</a>
Topic 25	Using DNA meta-barcoding to investigate the diets of fish	Associate Professor Daniel Bucher and Dr Cathy Nock	<a href="mailto:daniel.bucher@scu.edu.au">daniel.bucher@scu.edu.au</a>
Topic 26	Impacts of estuarine stingrays on sediment turnover, nutrient cycling and benthic infaunal community structure	Dr Debra Stokes, Dr Steve Whalan and Dr Dirk Erler	<a href="mailto:debra.stokes@scu.edu.au">debra.stokes@scu.edu.au</a>
Topic 27	Social license for land use change: landscape transitions to sustainability	Dr Hanabeth Luke	<a href="mailto:hanabeth.luke@scu.edu.au">hanabeth.luke@scu.edu.au</a>