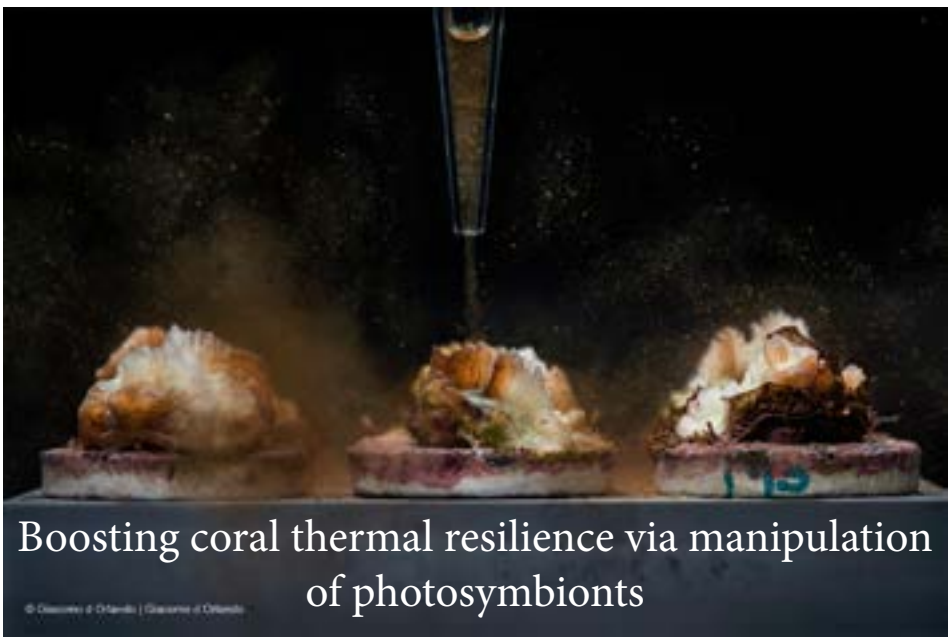
Applications are now open for two 3.5-year PhD scholarships in boosting coral resilience, for projects commencing 2026

Acknowledgement of Country
AIMS@JCU acknowledges the Traditional Custodians of land and sea country throughout Australia and recognises the continuing 60000-year connection to lands, waters and communities. We pay our respects to all Aboriginal and Torres Strait Islanders Cultures and to elders past, present and emerging.

About us
AIMS@JCU is a jointly funded Strategic Alliance between two global leaders in tropical marine science - the Australian Institute of Marine Science (AIMS) and James Cook University (JCU). Leveraging 40 years of collaboration we continue to build a strong base of skilled researchers and apply our diverse professional expertise to bring an increased capacity for world class tropical marine research. We do this by integrating the strengths, synergies, infrastructure and expertise of the two parent institutions to collectively address both national and international priorities with leading edge science outcomes. More specifically, the Strategic Alliance aims to support marine and coastal decision making in an era of rapid change by building knowledge and identifying strategies to bring about rapid, positive, and widespread transformations within and across marine ecosystems towards a more resilient and environmentally sustainable future. Within this context, Coral Reef Resilience is a priority research area. See https://aims.jcu.edu.au/ for more information.

The Great Barrier Reef Foundation (GBRF) is creating a future for the world's coral reefs by protecting ocean habitats, restoring coral reefs and helping them adapt to the impacts of climate change. The GBRF is a collaborative organisation that raises funds, invest in innovative ideas and designs real-world, scalable conservation programs in Australia and the Pacific. A central focus of GBRF's work is building coral reef resilience through partnering with researchers, First Nations people and front-line communities, to fast-track and deploy solutions around the world, strengthening the capacity of reefs to survive, adapt, and recover in a rapidly changing climate. See: https://www.barrierreef.org/ for more information.

Together, AIMS@JCU and the GBRF are co-funding this initiative to strengthen coral reef resilience through manipulation of coral photosymbionts aimed at boosting thermal tolerance.


Boosting coral thermal resilience via manipulation of photosymbionts

Project description
The use of experimental evolution to generate heat-evolved (HE) coral photosymbionts is a promising intervention to enhance thermal bleaching tolerance of corals. Both lab and field experiments have demonstrated this intervention can be successful. While several coral species inoculated with HE symbionts have been tested in the lab, to date this intervention has been tested in the field for only a single coral species at one site. It is expected that the benefits of HE symbionts vary with host coral species and environmental factors, therefore, testing additional coral species and field sites is critical for conducting a risk-benefit analysis, assessing the efficacy of this intervention and bridging the gap to implementation of this intervention. This project will continue the monitoring of the Platygyra daedalea fragments in the field as well as the surrounding environment, and in addition will (1) establish novel symbioses between at least one other coral species and HE symbionts, and (2) monitor performance of these novel symbioses in the field at the existing and one additional site.

The project will provide (1) field-based observations on the temporal stability of coral symbioses with HE symbionts, (2) a quantitative assessment of coral thermal enhancements as a consequence of associating with HE symbionts, (3) other phenotypic effects of associating with HE symbionts, (4) and insight into the spread of HE into the environment and wild symbiotic invertebrates.

About the available scholarships:
We are excited to announce two (2) 3.5-year PhD scholarships, to join this project team at AIMS, which are available for commencement in 2026.

PhD candidates will meet the following criteria (essential):
- Bachelor's Degree with at least Honours 2A, a postgraduate qualification with a supervised research component of at least one semester full time equivalent or a Master of Philosophy
- SCUBA qualification (PADI rescue diver or equivalent) with at least 30 hours of diving experience (including 10h ≥10m of depth)
- Ability to pass an annual dive medical
- Knowledge of experimental design and statistical analysis methods for research data
- Experience with laboratory experimentation, such as phenotypic or genetic analyses
- Experience with field research or surveys
- Experience with scientific writing, e.g., through the writing of a thesis, reports and/or scientific papers

and will have or have a strong interest in acquiring the following skills (desirable):
- Experience in the cultivation of microalgae
- Experience in the husbandry of marine invertebrates
- Experience in genetic and other omic analyses, both wet lab and data analysis
- Familiarity with writing code, e.g. in R

Application Process:
Applicants must send the following documentation directly to Prof. Madeleine van Oppen at m.vanoppen@aims.gov.au
- A 1-page (maximum) document addressing the selection criteria
- A current CV
- Evidence of consultation with the proposed supervisory panel
- University transcripts
- Visa status (if international)
- Earliest available start date in 2026

If successful in this initial stage, applicants will then be required to follow the JCU application process (assistance will be provided for this).

Successful candidates will:
- Receive a 3.5-year scholarship stipend equivalent to Australian Postgraduate Award (plus tuition fee waiver if relevant)
- Receive an additional $7,500 (AUD) per annum, supported by AIMS@JCU, to be used as a stipend top-up or project costs (by agreement between the student and supervisors)
- Have access to world class facilities and peer support at AIMS and JCU
- Receive additional AIMS@JCU support and benefits (see https://aims.jcu.edu.au/ for more information)

Deadlines for submission:
- Closing date for initial application: 30th January 2026
- Submission of JCU application to JCU Graduate Research School: 14th February 2026