AIMS@JCU NEWSLETTER

Kathryn Berry

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AIMS@JCU Postdoctoral Research Fellowships now available

Each fellowship is named in honour of distinguished marine scientists, celebrating their immense contributions to our field. See page 6 for more information.

AIMS@JCU Janice Lough Postdoctoral Fellowship – Reef Responses to Environmental change

Dr Janice Lough is recognised as a world leader in developing high-resolution environmental and growth histories from corals, assessing the nature and consequences of climate change for coral reefs and for the people who depend on them.

AIMS@JCU David McKinnon Postdoctoral Fellowship – Modelling Coastal Dynamics

Dr McKinnon and the biological oceanography group led many pioneering studies describing the plankton and their contribution to ocean productivity and marine foodwebs across northern Australia.

AIMS@JCU Bette Willis Postdoctoral Research Fellow – Reef Connectivity

Emeritus Bette Willis is a world leader in the biology and ecology of reef corals. Her research focussed on questions relating to the biology and ecology of stony corals, particularly the health of reef corals and the factors driving outbreaks of coral disease, and the potential of corals to acclimatise and adapt to a changing world.

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Photographs in this publication were submitted by AIMS@JCU members unless otherwise stated.

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About the AIMS@JCU Newsletter:

This newsletter is produced regularly and distributed by email to AIMS@JCU members, AIMS and JCU staff.

If you'd like to be added to our mailing list, or have a query regarding this newsletter, please contact:

Editor: Lauren Gregory

Email: aims@jcu.edu.au

Tiffany Sih

2024 AIMS@JCU Postdoctoral Research Fellow

Dr. Alzayat Saleh

Dr. Alzayat Saleh joins AIMS@JCU as the second Postdoctoral Research Fellow hired within our Triennial Plan. He brings his expertise in deep learning and computer vision to the AIMS@JCU partnership program as a Postdoctoral Research Fellow in Marine Science Technology. His arrival strengthens the program's focus on exploring the intersection of artificial intelligence and marine science.

Dr. Saleh will collaborate with a distinguished team including Melanie Olsen (AIMS), A/Prof Mostafa Rahimi Azghadi (JCU), and Prof. Bouchra Senadji (JCU) on a shared research interest: leveraging advanced computational models to enhance marine ecosystems.

His research investigates the integration of deep learning and computer vision with marine science, aiming to improve our understanding and preservation of these vital ecosystems. Dr. Saleh's background in artificial intelligence contributes to the development of solutions for marine habitat monitoring and species identification.

With a PhD and Master of Philosophy in Deep Learning - Computer Vision from James Cook University, Dr. Saleh possesses the skills needed to tackle complex challenges in marine technology. His dedication to the field is evident in his publications within prestigious journals, showcasing his commitment to advancing marine science through innovative computational models.

Dr. Saleh's technical skills include proficiency in programming languages like Python and C/C++ and frameworks such as PyTorch and TensorFlow. His active memberships in the IEEE and the Australian Computer Society demonstrate his ongoing pursuit of knowledge and contribution to the field.

At AIMS@JCU, Dr. Saleh's role extends beyond research. He will actively translate his findings into real-world applications, ultimately aiming to promote ecological sustainability and conservation efforts. His work holds promise for transformative changes in the field of marine science and technology. We are delighted to welcome Dr. Alzayat Saleh to AIMS@JCU and look forward to the impact his research will have on marine science technology.

Contact: alzayat.saleh@jcu.edu.au

2024 AIMS@JCU PhD Scholarship Recipient

Crystle Wee

Crystle's unwavering dream of becoming a marine biologist first started at the age of six when she thought it meant being able to talk to dolphins. Since then, her obsession with marine life has expanded to many more organisms that call the ocean home, which has resulted in an unhealthy collection of identification guides and a lifelong addiction to SCUBA diving.

Her first foray into coral reef science started in Malapascua, Philippines in 2013 where she volunteered to conduct reef surveys at thresher shark cleaning stations affected by dive tourism. Upon graduating from the Bachelor of Environmental Studies programme at the National University of Singapore, she ventured to the Maldives to work on coral monitoring and restoration initiatives, seeing firsthand the devastation of the 2016 bleaching event. She then returned home to Singapore where she worked in a consultancy for 5 years on a variety of environmental impact assessments and monitoring programmes, including large-scale coral relocation from reclamation works. After completing a Master of Science in Biodiversity Conservation and Nature-based Climate Solutions at NUS, she joined ITOPF, an organization dedicated to addressing ship-source pollution such as oil spills, where she conducted oil spill preparedness training and provided technical advice on spills.

Crystle's PhD research focuses on "ReefSeed", an innovative portable aquaculture production and deployment system for upscaled coral reef restoration that will soon be established in remote Maldivian communities. This project was initially developed by AIMS in collaboration with the Maldives Marine Research Institute (MMRI). Crystle's research aims to accelerate the active restoration process by deepening our understanding of coral reproduction in the Maldives, identifying barriers to the growth and survival of coral larvae during the vulnerable early stages and documenting the learnings of technology transfer and capacity-building for the ReefSeed project.

Her supervisory panel includes Dr. Carly Randall (AIMS), Prof. Mia Hoogenboom (JCU) and Dr. Muhammad Abdul Wahab (AIMS). She is also grateful to the Coral Accelerator Program (CORDAP) Foundation for funding the ReefSeed project.

Contact: crystle.wee@my.jcu.edu.au

Joseph Pollock

Leanne Currey-Randall

2024 AIMS@JCU PhD Scholarship Recipient

Bambang Hermanto

Project Title: Macroalgae Removal's Role in Rehabilitating Coral Reefs Post Disturbance event (Cyclone and Bleaching event)

Supervisors: Prof. David Bourne (JCU), Dr. Cathie Page (AIMS)

Bambang Hermanto was born in Jombang City, Indonesia and completed his Master of Science at James Cook University in 2020, where he majored in Marine Biology. His minor thesis project entitled "Comparative Image Analysis Approaches to Assess Ecological Effects of Macroalgal Removal on Inshore Reefs of Magnetic Island (GBR)", examining the accuracy of benthic community assemblages assessed through the CoralNet and comparing to manual image analysis. Bambang works as a young marine researcher in the Research Centre for Oceanography, National Research and Innovation Agency, Indonesia (BRIN). He applies his well developed capabilities to conduct coral reef benthic community identification and image data analysis skills, to carry out coral reef health monitoring across Indonesian reef ecosystems (2015-2021).

Bambang is thankful to have been awarded an AIMS@JCU Top up Scholarship for research project costs under the supervision of Prof. David Bourne (JCU) and Dr. Cathie Page (AIMS).

His research aims to understand the effects of macroalgal removal on reef benthic community dynamics, coral recruitment patterns and reef fish populations post disturbance (cyclone and bleaching event) across study sites on Maggie Island, Kepple Island and Indonesia.

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2024 AIMS@JCU PhD Scholarship Recipient

Martina Lonati

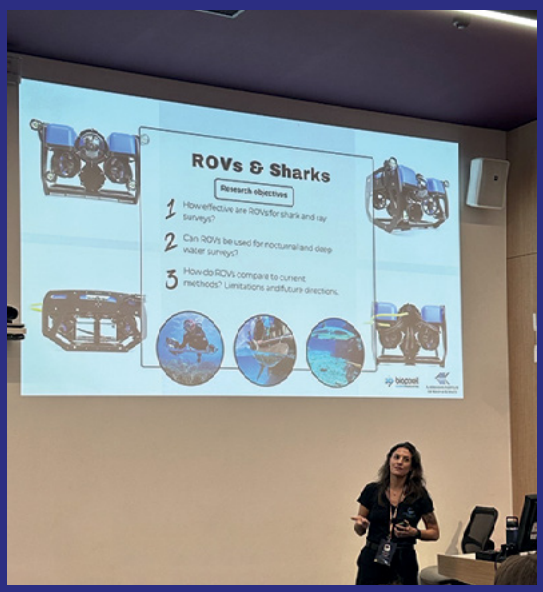
Project Title: Sharks in Time and Space

Supervisors: Adam Barnett, Andrew Chin, Stacy Bierwagen, Jodie Rummer, Rhondda Jones

Martina is a research student at James Cook University, currently undertaking a Master of Philosophy degree as part of the AIMS@JCU partnership program. Through the AIMS@JCU scholarship award, Martina can now commit her time exclusively to research and completing her candidature with optimal results. For her thesis, Martina works closely with Dr. Adam Barnett and Dr. Stacy Bierwagen to explore and propose solutions addressing the spatiotemporal limitations inherent in estimating the abundance and occurrence of sharks and rays.

There are many challenges associated with counting shark and ray species. They can be extremely hard to find, occur at depths that are not diveable using traditional scuba, migrate across oceans, and most species are considered to be nocturnal. Consequently, the collection of reliable and representative abundance and occurrence estimates for sharks and rays present many hurdles to cross.

In her research, Martina expands on existing methods (1) photographic identification and (2) underwater Remotely Operated Vehicles to improve their survey capabilities for sharks and rays. These two methods have attracted attention due to their capacity of expanding the spatial and temporal scales of traditional surveys, and offer an exciting launching platform for technological applications, such as artificial intelligence for animal ID and adaptability of underwater drones for marine research.



Greg Torda

Martina's research is at the forefront of trialling new methods and applications in shark and ray research, ultimately collecting more representative data. Accurate estimates of abundance and occurrence of shark and ray species will allow effective, targeted, and successful conservation efforts for this threatened taxon of marine vertebrates.

Contact: martina.lonati@my.jcu.edu.au

Greg Torda

Research Director Report

AIMS@JCU is growing and moving!

AIMS@JCU Postdoctoral Research Fellowships to support marine and coastal decision making in an era of rapid change (continued from details on front page).

We are pleased to call for applications for three new AIMS@JCU Postdoctoral Research Fellowships to join our current postdoctoral cohort - Dr Sarah Lawless and Dr Alzayat Sahel.

This initiative continues the long partnership between our leading tropical marine research institutions, offering the opportunity to work closely with distinguished researchers from both AIMS and JCU.

Each fellowship focuses on a theme within the AIMS@JCU Triennial Plan and is named in honour of a distinguished AIMS or JCU marine scientist, celebrating their immense contributions to the marine sciences.

1) AIMS@JCU Janice Lough Postdoctoral Fellowship – Reef Responses to Environmental change

The successful applicant will design and deliver high impact research using laboratory-, aquarium- and field-based experiments to measure and understand reef responses to environmental change.

2) AIMS@JCU David McKinnon Postdoctoral Fellowship – Modelling Coastal Dynamics

This research will develop methods and tools to quantify and predict changes in dynamic coastal settings in northern Australia, to better understand habitat sensitivity and vulnerability, towards improving conservation and other environmental (e.g. blue carbon storage) outcomes.

3) AIMS@JCU Bette Willis Postdoctoral Research Fellow – Reef Connectivity

The successful applicant will develop oceanographic and biophysical dispersal models based on the extensive AIMS and JCU large-scale, long-term datasets, to better predict how oceanographic circulation and biological attributes shape connectivity between reefs.

The call for applications closes 19/08/2024, so please share widely with your networks.

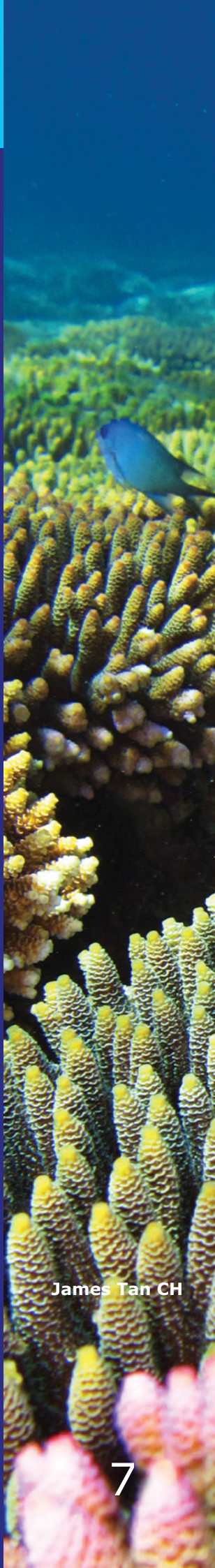
AIMS@JCU Scholarships to support marine and coastal decision making in an era of rapid change.

Applications for AIMS@JCU 2025 scholarships are now open for both domestic and international individuals who are interested in undertaking either a PhD or Masters' by Research at JCU and AIMS in the marine sciences and related fields. The AIMS@JCU Higer Degree Research (HDR) scholarship is highly competitive and offers a $7,500 pa top up in addition to the JCU base rate for JCU's HDR Scholarships which is currently $33,500 pa and is already the highest of any Queensland university. The top up can be taken as either a stipend or as project funding.

International AIMS@JCU scholarship applications through JCU will be accepted until 31st August 2024. Domestic applications are accepted all year round but are dependent on quota. To be eligible to apply for the AIMS@JCU Scholarship you need to:

- view the full list of participating countries on the Department of Foreign Affairs and Trade (DFAT) website,
- have made contact with a potential AIMS and JCU supervisor prior to applying (view the list of AIMS@JCU staff, including the AIMS@JCU postdoctoral fellows),
- with the AIMS supervisor, completed the AIMS new HDR student form,
- complete the AIMS@JCU cover sheet (available on the AIMS@JCU website) to submit with your JCU application, and
- meet the JCU minimum merit score and English requirements.

Projects should be aligned with the AIMS@JCU Triennial Plan. If you are interested in applying, check out the AIMS@JCU website for advertised projects, or alternatively, reach out to an AIMS or JCU researcher, or alumni, from the AIMS@JCU staff register to discuss your ideas.



James Tan CH

Elizabeth Abbey

Research Director Report

AIMS@JCU news and date claimers

AIMS@JCU R-course

The R-course, run by our very own Dr Murray Logan, is happening now (29th July – 9th August) and continues to be a popular feature of the AIMS@JCU program. This year has seen both AIMS and JCU students and staff attending, as well as staff from GBRMPA, highlighting the program's reputation and external reach!

AIMS@JCU Seminar Day: 6th September

The 2024 AIMS@JCU Seminar Day will be held at the Museum of Tropical Queensland under the replica of the shipwrecked HMS Pandora. Calls for oral and poster presentations are now open. All AIMS@JCU student members are eligible to attend and participate, with heaps of prizes up for grabs, noting that it is mandatory for AIMS@JCU scholarship holders to present an oral, a poster and a 3-minute talk during their candidature. For supervisors, this is a great opportunity to support your students and meet researchers from the other side of the @ - so please lock in the date now!

AIMS@JCU End of Year Celebration: 6th December

To celebrate yet another wonderful year full of AIMS@JCU achievements, we invite you to join us for a fun afternoon at X-Golf! We'll start at 2.30pm for 90 minutes of mini-golf, pizza and drinks. We need RSVPs for this event, so please contact us as soon as possible if you'd like to come along.

AIMS@JCU Office Relocation

We are on the move! We have relocated temporarily to the ground floor of JCU Building 17. The three offices have been consolidated, with the AIMS@JCU staff office now in room 049 and the student hot desk office in room 047 – access remains as before, but please reach out to aims@jcu.edu.au if you require any assistance. Don't forget, there are also plenty of options at the JCU City Campus.

Cherie Motti, AIMS@JCU Research Director (c.motti@aims.gov.au)