

April 2022

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AIMS@JCU Awards: Round 1 for 2022

The first AIMS@JCU award round is now open for applications. There is a new category of awards this year (Professional Development Awards), which can be used for formal training at an institute, workplace or in industry to learn a new skill or technique or developing your skill set. The deadline for all of the AIMS@JCU awards (Science Communication Awards, Pilot Research Awards and Professional Development Awards) is 10th April 2022. Please contact the AIMS@JCU office if you haven't received the application forms.

We are also pleased to announce that AIMS@JCU are sponsoring the AMSA 2022 Student Social Night and are keen to have as many of our wonderful students present as possible. Through the competitive AIMS@JCU travel funding awards, we hope to provide support for travel to and from Cairns for as many of you as we can.

We are continuing to offer one year memberships to AMSA for AIMS@JCU students who are not currently members of AMSA. This is in memory of Joe Baker who has personally sponsored this for many years to encourage new membership of students in AMSA. If you have not heard of AMSA, we encourage you to take a look at their site: <https://www.amsa.asn.au/>. If you are interested in this membership offer please contact the AIMS@JCU office prior to 10th April 2022.

We are recruiting the first AIMS@JCU Postdoctoral Research Fellow, in the field of Marine Technology and Engineering, to conduct research into any area of marine technology or engineering under the joint-supervision of AIMS and JCU researchers. Applications close 17th April 2022. See [here](#) for more details. Please circulate to your networks!

Contact: aims@jcu.edu.au

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

We are reducing our carbon footprint by limiting the number of printed copies available. Please let us know if you need a hard copy of this newsletter

About the AIMS@JCU Newsletter:

This newsletter is produced quarterly 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:

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2022 AIMS@JCU PhD Scholarship Recipient

Ingo Miller

Project Title: Drivers of Migration and Habitat use of Marine Predators

Supervisors: Leanne Currey-Randall (AIMS), Adam Barnett (JCU), Kátya Abrantes (JCU) & Marcus Sheaves (JCU)



Growing up in Germany, far from the sea, Ingo has developed a great passion for tropical marine life in general and for sharks in particular, ever since he dived the Great Barrier Reef for the first time. After serving five years in the military, he pursued his bachelor degree in Environmental Management at Justus Liebig University in Giessen,

Germany, where he investigated the uptake of microplastic by reef building corals. In 2020 he graduated with a master's in Marine Environmental Sciences from Carl von Ossietzky University of Oldenburg, Germany. During his master's, Ingo completed an exchange semester at JCU in Townsville in 2019 as well as a research project on shark tracking with his now PhD advisor. For his master's thesis, Ingo travelled to Guam and investigated the toxicity of chemical pollutants to coral of different life stages. Since graduating, he has continued working on his thesis project as a research assistant at the Institute for Chemistry and Biology of the Marine Environment (ICBM). Ingo is also a passionate diver (instructor and certified scientific diver) and underwater photographer. He is very grateful to have received an AIMS@JCU scholarship and is keen to commence his PhD in June.



Mikaela Miller

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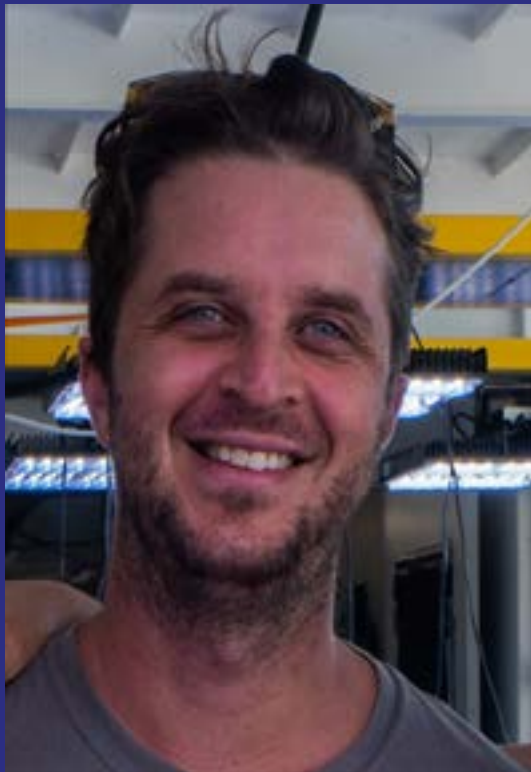
2022 AIMS@JCU PhD Scholarship Recipient

Rhys Cornish

Project Title: Phenotypic signatures of temperature tolerance (and other fitness related traits) in corals on the Great Barrier Reef

Supervisors: Line Bay (AIMS), David Bourne (JCU) & Samantha Goyen (AIMS)

Rhys grew up in Sydney, Australia where he spent every opportunity at the beach, whether it be in the surf, or checking out the rockpools for critters. He spent a few years after school soul searching and by chance he booked into a dive course in Sydney... in the middle of winter. Despite the cold, experiencing what lay underneath the waves changed everything and soon he was living in south-east asia teaching others to SCUBA dive. At the ripe age of 24, he then began a path to becoming a marine scientist in order to understand more about what was down there. After the Bachelors degree, he spent 5 years working fulltime at places like AIMS, JCU and Orpheus Island Research Station, all while completing a masters of science part time. At the completion of the Masters degree, Rhys knew it was time to get his teeth into a larger project that he could call his own so promptly applied for a PhD with AIMS@JCU with Dr Line Bay, Dr Samantha Goyen and Dr David Bourne, looking for "Phenotypic signatures of temperature tolerance (and other fitness related traits) in corals on the Great Barrier Reef".



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Josephine
Neilsen

2022 AIMS@JCU PhD Scholarship Recipient

Alexander Macadam

Project Title: Genomic prediction of heat tolerance in selectively-bred corals

Supervisors: Kate Quigley (AIMS), Ira Cooke (JCU) & Jan Strugnell (JCU)

Alex grew up in Devon, UK, where he spent his weekends at the beach searching for critters in the inter-tidal pools. As soon as he was old enough, Alex took the opportunity to learn to dive. This is where his fascination with coral reefs began. Alex perused a Bachelors (Hon) degree in Marine Biology at Swansea University and continued on to a Masters by Research. After graduating, Alex spent a year travelling, before securing a job as Research Coordinator at a research station in Norway. After several years in the Arctic, Alex was drawn back to the reef. For the past two years, he has been working at AIMS in several roles, including Experimental Research Technician with the Assisted Gene Flow project and Field and Lab Technician with the Water Quality team. Now, Alex is continuing his research journey at AIMS by pursuing a PhD examining genomic predictions of heat tolerance in selectively bred corals.



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Rachel Neil

Student support awards report

Chineyne Ani

I would like to thank the AIMS@JCU team for awarding me a \$750 Science and Communication Award in November 2021. This award facilitated my one-week visit to CSIRO in Hobart for collaborative research with the eReefs modelling team. During my visit, I worked intensively with the collaborative team on improving the *Trichodesmium* growth model of the CSIRO Environmental Modelling Suite (EMS). EMS is a coupled 3D hydrodynamic, biogeochemical and sediment modelling system that simulates the physical state and water quality of the Great Barrier Reef (GBR).

Trichodesmium has been proposed to be an important source of new nitrogen in the GBR. An understanding of *Trichodesmium* dynamics in the GBR ecosystem requires reliable EMS simulations of *Trichodesmium* growth, nitrogen fixation and distribution. However, the current version of EMS *Trichodesmium* growth model does not consider varying phycobilipigments and their photoprotective properties. The team and I worked on improving the *Trichodesmium* growth model by parameterising the dynamics of phycobilipigments.



Furthermore, I presented my work on the estimation of the contribution of nitrogen fixation by *Trichodesmium* to the annual nitrogen budget in the GBR using simulated EMS results. The trip provided an opportunity for me to build closer networks with the eReefs modelling team, communicate my research, and improve my model development and troubleshooting skills. Funds were used for my round-trip to Hobart.

I used the money provided by the AIMS@JCU Pilot Research Award to purchase laboratory reagents required for the DNA extraction and PCR amplification of the ITS-II gene region from Symbiodiniaceae cells and am currently in the process of extracting and amplifying DNA from all samples.

Thanks to the AIMS@JCU Pilot Research Award, I have been able to develop my laboratory skills in preparing samples for sequencing and the funds will allow me to gain familiarity with bioinformatics analyses and add a significant data component to my PhD project.

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Chris Brunner

New AIMS@JCU Strategic Alliance Agreement

AIMS@JCU began an exciting new era on 1st January this year, when the ink dried on the next version of our Strategic Alliance agreement. This 10 year, \$22M direct co-investment by AIMS and JCU is an incredible vote of confidence in the success and value that the partnership delivers to both organisations. Together – we are definitely much bigger than the sum of our parts!

The new arrangement goes well beyond our business-as-usual. It continues our trademark investment in and support of HDR studentship, and expands the depth and breadth of the relationship into new strategic priority research areas with meaningful resources to support a combined critical mass to tackle them. Specifically, the new agreement provides for:

- Award of 16 HDR scholarship years annually – can be mixed and matched between Masters and Doctoral candidature;
- Recruitment of at least one AIMS@JCU postdoctoral fellow (3 year appointment) per year. This is the minimum – and in the first year AIMS and JCU have agreed to support recruitment of 3 post-doctoral fellows;
- More streamlined opportunities for JCU enrolled students to undertake internships and Work Integrated Learning placements at AIMS;
- Support for science associated training and employment pathways, including a focus on opportunities for Aboriginal and Torres Strait Islander students integrated with the AIMS Indigenous Partnerships Plan; and
- Reciprocal adjunct appointments for AIMS and JCU staff to facilitate access to the combined research infrastructure of the parties and minimise any organisational barriers to collaboration.

From now on, AIMS@JCU has a mandate to broaden and deepen our combined disciplinary focus (see the SAC list below) and create trans-disciplinary approaches to address the big issues that collectively, we are best placed to tackle. This will be directed by our refreshed Science Advisory Committee, who will develop a triennial research strategy to guide the allocation of AIMS@JCU investment and resources (HDRs, post docs, research funds, etc). The first Triennium Plan is currently under development by the following SAC members:

New AIMS@JCU Strategic Alliance Agreement

Continued

Role	Current incumbent
AIMS Chief Research Officer, SAC co-chair	Dr David Souter
JCU Dean, College of Science and Engineering, SAC co-chair	Prof Ron White
AIMS@JCU Research Director	Libby Evans-Illidge
AIMS@JCU Ass. Research Director	Dr Cherie Motti
AIMS Research Manager	Dr Lyndon Llewellyn
AIMS Research Program Director – A Healthy and Resilient GBR	Dr Britta Schaffelke
AIMS Research Program Director - Sustainable Coastal Ecosystems and Industry	Dr Claire Streten
AIMS Executive Director - Strategic Development, Technology Development and Engineering	David Mead
JCU Discipline Head – Marine Biology and Aquaculture	A/Prof Mia Hoogenboom
JCU Discipline Head – Engineering and Physical Sciences	A/ Dean, Daniel Christie
JCU Director, Tropwater	Prof Damien Burrows
JCU Discipline Head of Social Science, Centre Coral Reef Studies	Prof Tiffany Morrison

New AIMS@JCU staff member

Darin Gaw

We are excited to welcome our new AIMS@JCU Administration Officer Darin Gaw.



Darin is a Townsville local and recently finished a Virtual Reality project for the University of Newcastle at Lavarack Barracks. Darin is a veteran and served in the Army for 21 years with multiple deployments to Timor Leste and the Middle East. Darin left the Army to take up a three-year position with the Eliminate Dengue Program in Townsville as a Monash University employee. Once the program finished, Darin worked in State Government and Defence as a public servant for six years. Darin is thrilled to be working at AIMS and contributing to the AIMS@JCU team. Darin will be alternating between AIMS and JCU campuses, he's happy to have a chat with you about any AIMS@JCU related issues. He is a valued member of our team and we're very grateful to have him on board - Welcome Darin!

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Chris Brunner

Research Director Report

It's been a busy start to the new year – with a warm welcome to our new scholarship recipients, a new staff member Darin Gaw, and pleasing progress with our existing students including a couple of recent completions! Special congratulations to those who have recently submitted, and to Marina Santana, Jose Montalvo Proano and Felicity Kuek who recently donned their floppy velvet hats at this year's graduation ceremony. Our students are such a testament to resilience and perseverance - to push through all challenges and complete their studies despite the added stress of the covid pandemic. We are so proud of you!

Perhaps the most exciting hallmark of this new year is the commencement of our new AIMS@JCU agreement, and all that it promises over the next decade! I'm looking forward to working with our new governance groups especially the Scientific Advisory Committee, and the emergence of world-class innovative cross-disciplinary science and science leaders.



It was wonderful to see the successful launch of the electric-powered Autonomous Wave Adaptive Modular Vesel (WAM-V) at the AIMS ReefWorks test range recently. This is a JCU project involving final year engineering students, who are preparing to compete in the [2022 Maritime RobotX Challenge](#) in Sydney later this year. The Challenge

is an international competition designed to foster student interest in autonomous robotic systems operating in the maritime domain. AIMS technology development team is providing the JCU team with sponsorship and practical assistance in the development and testing of their WAM-V. What a wonderful example of AIMS and JCU working together in such an innovative project. Full story [here](#). Image courtesy of Joe Gioffre.

We're looking forward to reading everybody's proposals for the Science Communication, Pilot Research and Professional Development awards, good luck to all of the applicants.

Libby Evans-Illidge, AIMS@JCU Research Director
(e.evansillidge@aims.gov.au);

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

Chris Brunner