



Christopher Brunner

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2023 AIMS@JCU Postdoctoral Fellow

Dr Sarah Lawless

Dr Sarah Lawless is a marine social scientist and Postdoctoral Research Fellow in Ocean Governance. Sarah is the first social scientist engaged under the AIMS@JCU partnership program. Under this partnership, Sarah will work closely with Dr Lyndon Llewellyn (AIMS) and Prof. Tiffany Morrison (JCU) to explore a research area of common interest - improving governance of changing oceans.

Sarah's research looks critically at how marine science, policies and interventions seek to improve fisheries, food systems and coastal environments, and the implications these may have on human development outcomes. Her publications in journals including *Global Environmental Change*, *Nature Climate Change* and *Marine Policy*, illustrate the tendency for marine governance and associated interventions to prioritise ecological goals without attention to social impacts, including inadequate integration of local perspectives and needs. Sarah's empirical research in the Pacific Islands region illustrates that even when commitments to addressing social inequities are made in policy and practice, approaches often misdiagnose the underlying drivers of inequity resulting in instrumental and symptomatic responses.

Sarah's research adds weight to growing calls to improve the way human dimensions are considered and integrated within marine research, policy and practice.

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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:

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2023 AIMS@JCU PhD Postdoctoral Fellow

continued

Specifically, her research emphasises how social equity, human rights and justice are foundations to sustainable social-ecological systems, and provides guidance to more deeply consider and address such issues. Sarah's research contributions include insights for small-scale fisheries and climate policies and practices to ensure equitable outcomes for local communities.

Much of Sarah's empirical research has been conducted in tropical marine social-ecological systems in the Pacific Islands region, including Solomon Islands, Papua New Guinea, Fiji and Vanuatu. As an applied qualitative social scientist, Sarah has spent the past decade working as an expert consultant alongside a range of non-governmental organizations, research institutions and universities working on equitable social-ecological systems research, policy and practice. Some of these organisations include the Nature Conservancy, WorldFish, the World Wide Fund for Nature and CARE International. Sarah works closely with a network of social scientists and development practitioners to ensure her research is grounded in the realities of coastal communities.



Sarah is a member of the Governing Ocean Change research program and SNAPP group. Here, Sarah joins an interdisciplinary team of scientist, government and non-government experts working toward governance transitions fit for novel and rapidly emerging interventions in climate-impacted oceans.

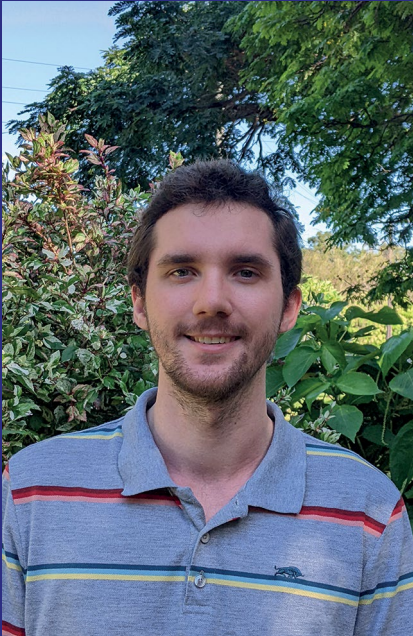
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2023 AIMS@JCU PhD Scholarship Recipient

Daniel Croul

Project Title: Concurrent Autonomous Surface-Underwater Monitoring System

Supervisors: Dr. Shou-Han Zhou (JCU), Dr. Paul Rigby (AIMS) and A/Prof Mia Hoogenboom (JCU)



Daniel Croul was born in Townsville and completed his Bachelor of Engineering (Honours) – Bachelor of Science at James Cook University, where he majored in electrical engineering and mathematics. His thesis project entitled “System Identification of a Wave-Adaptive Modular Vessel using Prediction Error Methods” exposed him to the field of robotics. During this time, Daniel developed an interest in applied control theory for embedded systems, and modelling of robotic systems.

Daniel is extremely thankful to have been awarded the AIMS@JCU scholarship under the supervision of Dr. Shou-Han Zhou (JCU), Dr. Paul Rigby (AIMS) and A/Prof Mia Hoogenboom (JCU). His research aims to model dynamics associated with a surface vessel tethered to an underwater vehicle, and simulate the coupled systems motion under manifold theorem-based control. Specifically, he is aiming to ensure the autonomous surface vessel (ASV) and autonomous underwater vehicle (AUV) can readily detect objects, and plan its motion accordingly to prevent fouling of the tether. There are several potential applications for the technology, such as more efficient sampling of data throughout the water column, and deployment in nearshore, turbid zones to capture high resolution images of the benthos; these zones would normally be inaccessible by divers due to safety concerns.

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Student support awards report

Magenta Marzonie

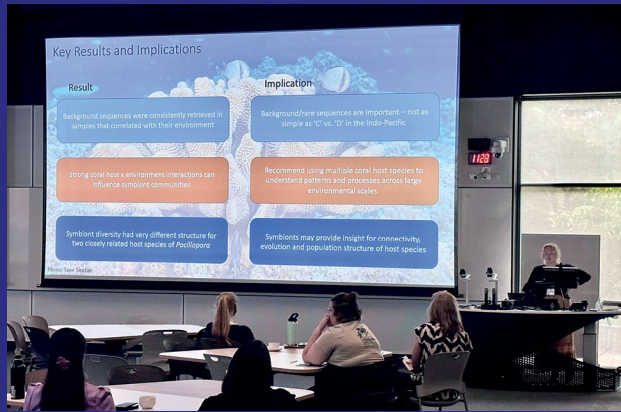


Photo of Magenta giving a presentation at the ACRS conference. Photo credit: Victor Huertas

In November 2022, the Australian Coral Reef Society held their 100th year conference in Brisbane, QLD. I was fortunate enough to be able to attend this conference with the support of a Science and Communication Award from AIMS@JCU. During the conference, I

gave a 15-minute oral presentation on my second PhD chapter, which focuses on the environmental and coral host drivers of Symbiodiniaceae (coral symbionts) across thermally distinct reefs in the Coral Sea. My presentation sparked a lot of interest, resulting in great conversations with academics, industry partners and marine park officials.

The conference consisted of two ambitiously packed days of seminars hosted at the University of Queensland campus. There was also a poster session evening on Saturday night at the modern Queensland University of Technology's The Cube venue, featuring virtual posters. This was an innovative way not only to reduce environmental impacts, but also allowed presenters the opportunity to include videos as part of their posters. The conference dinner was another highlight, featuring an auction of a beautiful, marine-themed painting created by a local artist during the conference.



Photo of live painting being auctioned off at the conference dinner. Photo credit: Annie Sandrine.

Overall, the event fostered an inclusive environment, and keynote presentations ranged from an inspiring talk by AIMS' Dr Bob Muir on Partnerships with Australian Traditional Owners, to a brilliant talk by Kerry Foxwell Norton (Griffith University) on untold stories of Women of the Great Barrier Reef. I would certainly recommend AIMS@JCU students to attend an ACRS conference in the future, as a great way to promote their research, network, and exchange ideas with research scientists in a relaxed environment.

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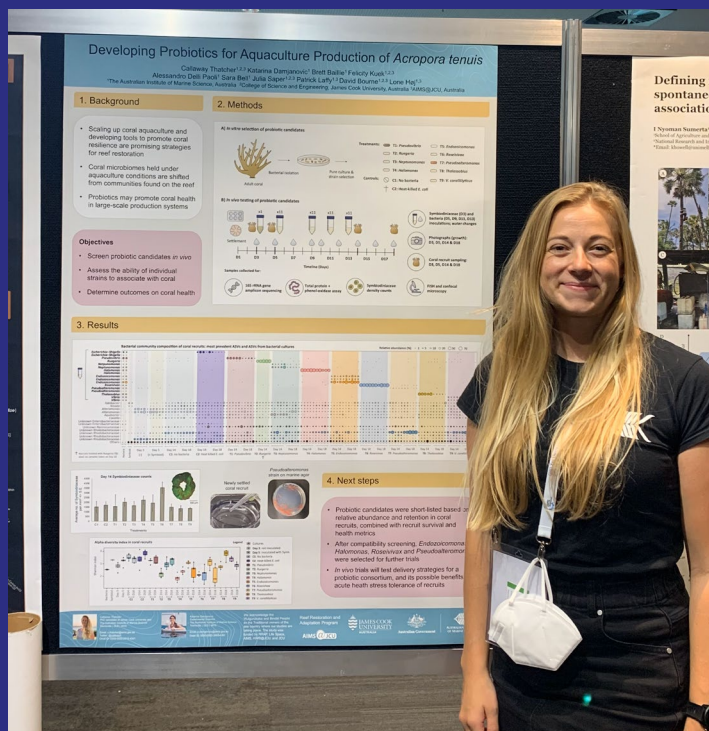
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Student support awards report

Callaway Thatcher

Thanks to the AIMS@JCU science communication award I was able to attend the Australian Microbial Ecology conference in Melbourne Australia and present a poster.

The year's AusME conference was a three-day single stream conference held at the Melbourne Connect in the city center. This event brought leading experts in the field of microbiology together from all over the country including several members of my team. While attending the conference, I was able to make new and lasting connections with other students and mentors. In particular it enabled me to interact with the University of Melbourne team that I frequently communicate with over zoom. The value of in person connection cannot be undervalued and has led to what I believe will be some lifelong networks and collaborations.



One part of the conference I particularly enjoyed was sharing my poster with a diverse audience that have helped me better develop my science communication skills. To top off the whole event, my poster was chosen by the judges as 'best poster' and I won a cash prize!

Attendance at this event was made possible by the generous science communication grant and the support of AIMS@JCU.

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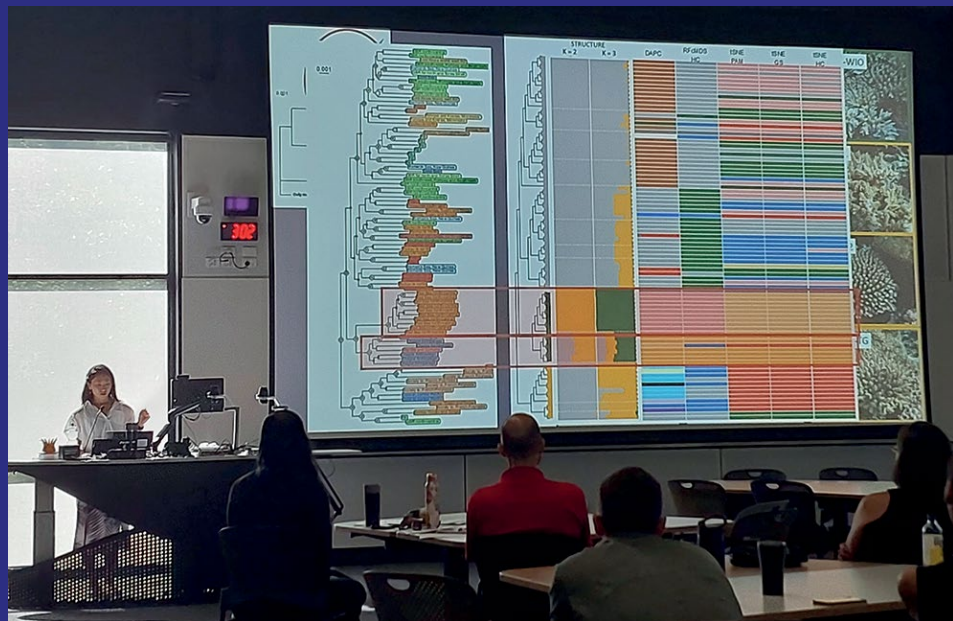
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Student support awards report

Sandra Erdmann

The Australian Coral Reef Society (ACRS) Conference took place from 25th – 27th November 2022 in Brisbane. I held a 12 minute presentation, followed by a 3 minute questions round on my most recent findings on the genetic diversity and connectivity of *Acropora tenuis* populations at Magnetic Island and adjacent reefs. I submitted this abstract for my presentation:

“Population declines and isolation can reduce fitness and resilience in coral populations due to low genetic diversity. Reefs surrounding Magnetic Island in the central inshore region of the GBR are categorized as degraded. The dominant reef-building species *Acropora tenuis* at Magnetic Island may be at risk though their population structure, genetic diversity and connectivity to adjacent reefs is unknown. This knowledge is crucial to underpin the management of local reefs and therefore this project will assess the genetic diversity and connectivity of *A. tenuis* populations across fringing reefs surrounding Magnetic Island.”



Hanaka Mera presenting phylogenetic analysis in Acroporidae.

I much enjoyed the friendly atmosphere at the conference and I'm glad to have been able to extend my scientific network. Besides presenting, I had very informative discussions with lead scientists in my field, advancing my project and inspiring future work. I was able to build my network and potentially contribute to other related projects in the near future. I am very thankful to have received the AIMS@JCU science communication award, which enabled me to communicate my results to an expertise audience.

Contact: sandra.erdmann@my.jcu.edu.au

Hannah Epstein

Research Director Report

Dr Cherie Motti

Welcome to the mid-2023 AIMS@JCU Newsletter.

Graduation

One of the most rewarding parts of being the AIMS@JCU Research Director is participating in the JCU Graduation Ceremony. On the 30th March this year, Mr Bill Tweddell presided over his last JCU Graduation Ceremony as the JCU University Chancellor. It was an emotionally charged day, made even more so by the high number of AIMS@JCU students donning the graduation robe and floppy bonnet. This traditional attire is a formal recognition of years of hard work and dedication to their field of study. We would like to congratulate our newest AIMS@JCU Drs: Dr Chris Brunner, Dr Mikaela Nordborg, Dr Ramona Brunner, Dr Marites Canto, Dr Paul O'Brien, Dr Sam Noonan and Dr Michaela Miller.



AIMS@JCU Staff

After 17-months with AIMS@JCU, we are saying goodbye to Darin Gaw. Darin joined AIMS@JCU in January 2022 under the auspice of COVID. He has reinstated the AIMS@JCU Morning teas and been a strong advocate of the indigenous projects within AIMS@JCU. Darin is moving across to the AIMS Indigenous Partnerships Program where he will continue to facilitate AIMS@JCU engagement and support young indigenous students.

AIMS@JCU welcomes Prof. Jenny Seddon, the new JCU Deputy Vice Chancellor Research. Jenny also joins the AIMS and JCU Leadership group and will preside over strategic matters to grow and strengthen the AIMS@JCU Strategic Alliance.

We would like to extend a warm welcome Dr. Sarah Lawless. Her work in Ocean Governance represents a new science direction for AIMS@JCU and we are excited to see where this leads.

Mikaela
Nordborg

Research Director Report (continued)

Indigenous Engagement

A new joint initiative between AIMS@JCU and AIMS Indigenous Partnerships Program is the establishment of two 12-week undergraduate indigenous internships for 2023-24 and 2024-25. We are excited to introduce Laure Senor and Courtney Burns as the first interns recruited through this program. They will begin their placements in the coming months.

AIMS@JCU Awards

The first round of the 2023 AIMS@JCU Pilot Research Awards, Science Communication Awards and AMSA Awards was well subscribed, with 17 awards granted.

We would like to congratulate: Karl Jensen, Ka Wing Kong, Yat Yi Lai, Tiny Remmers, Alexis Sedgwick and Laura Zeuthen who each received \$1,000 to support a pilot research project.

Science communication awards were granted to: Rhys Cornish, Sandra Erdmann, Julia Hung, Shiori Kanno, Katrina Kaposi, Marine Lechene, Rachel Neil, Tiny Remmers, Hugo Scharfenstein and Marko Terzin.

This year saw a new award being offered, the Professional Development Award. This award is to facilitate training to learn a new skill or technique and support work experience at a national or international facility. All AIMS@JCU student members are eligible. This year the Professional Development Award was granted to Callaway Thatcher.

Congratulations to all and we look forward to hearing all about your activities!

Upcoming events

- Bimonthly AIMS@JCU Morning Tea. AIMS@JCU will be hosting bimonthly Morning Tea, the next one will be hosted at JCU on Monday 17th July 2023. The following one will be Wednesday 20th September at AIMS. Keep an eye out for your invitations.
- AMSA Conference on the Gold Coast, 2-7th July 2023. Good luck to all students who are presenting!
- R-course, run by Dr. Murray Logan, will be held from 31st July – 11th August 2023.
- AIMS@JCU Seminar Day will be held on 29th September at the Townsville Yacht Club.

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

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