



Christopher Brunner

**May 2019**

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## Graduation

Congratulations to the AIMS@JCU students who graduated in 2018:

**Hannah Epstein** - Investigating the drivers of microbial community composition in reef-building corals. Supervisors: Madeleine Van Oppen, Gergely Torda and Philip Munday.

**Stefano Montanari** - Causes and consequences of natural hybridisation among coral reef butterflyfishes (Chaetodon: Chaetodontidae). Supervisors: Lynne van Herwerden, Morgan Pratchett, Jean-Paul Hobbs, Line Bay and Gregory Maes.

**Blake Ramsby** - The effects of a changing marine environment on the bioeroding sponge *Cliona orientalis*. Supervisors: Nicole Webster, Mia Hoogenboom and Marcus Sheaves

**Thomas Edward Roberts** - Ecological Determinates of Depth Zonation In Reef-Building Corals. Supervisors: Andrew Baird, Thomas Bridge, Geoff Jones and Julian Caley

**Michael Jarrold** - Effects of diel CO<sub>2</sub> cycles on the early development and behaviour of coral reef fishes under ocean acidification. Supervisors: Philip Munday, Craig Humphrey and Mark McCormick.

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

### 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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## 2019 AIMS@JCU PhD scholarship recipient

Alfonso Ruiz Moreno

Project title: Spatial and temporal dynamics of reef fish diversity: Combining community ecology and phylogenetics.

Alfonso completed his Bachelor of Science with honours in 2018. In his honours research he looked what were the ecological processes behind patterns of abundance of species. Alfonso is currently doing his PhD under the supervision of Sean Connolly (JCU), David Bellwood (JCU) and Mike Emslie (AIMS). His project will investigate the spatial and temporal biodiversity patterns of reef fishes from an ecological and phylogenetic perspective. In his project, he aims to compare community ecological and phylogenetic measures of biodiversity, and to evaluate which processes are driving these biodiversity patterns. By exploring novel spatiotemporal patterns in ecological data, and by formulating and analysing process-based models to determine what kinds of processes can generate those data, Alfonso will contribute to the development of biodiversity theory for species rich systems. Such theory is essential to understand whether and how ecological interactions will influence the way that species respond to ongoing environmental change.



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## 2019 AIMS@JCU PhD scholarship recipient

Chinenye Ani

Chinenye graduated with a Bachelor's degree (with honours) in Mathematics at the University of Jos, Nigeria in 2015. She completed a Masters in Mathematical Science at the University of the Western Cape, South Africa in 2017 and continued to a Research Masters in Applied Mathematics at the University of Cape Town. Her research involved the use of mathematical models to investigate the chaotic dynamics of magnetic field lines in a nuclear fusion device. She is enthusiastic about using mathematical models to solve real life problems.



She has commenced a PhD in the AIMS@JCU program and is supervised by Barbara Robson (AIMS) and Steve Lewis (JCU). Her project would develop an improved biogeochemical model for the Great Barrier Reef that builds upon the existing world-class eReefs models, but better accounts for processes and responses relevant to climate change scenarios. The improved biogeochemical model will yield improved and more reliable predictions. These improved predictions will be framed in a way that makes them relevant to policy decisions in mitigating the impacts of climate change on the Great Barrier Reef.

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## Science Communication Award report

Mikaela Nordborg

In May 2018 I was fortunate enough to attend the annual Australian Coral Reef Society conference held at the Ningaloo Centre in Exmouth, WA, to present results from the first chapter of my thesis and to accept the 2018 ACRS Student Research Award. My attendance at the conference was possible thanks to receiving one of the AIMS@JCU Science Communication Awards and it provided a fantastic opportunity to learn from and network with both scientists and stakeholders relevant to my research project. During my seminar I presented results on the relative sensitivity of different life stages of the model coral *Acropora millepora* to the water soluble fraction of heavy fuel oil in the absence or presence of ultraviolet light. This comparative study will be the first of its' kind for coral reef organisms and will aid in focusing future research efforts into the effects of petroleum oils as well as contribute to improved risk assessments and management for coral reef environments. In addition to the Student Research Award, which facilitated my experiments testing the potential interactions between oil toxicity and climate change on coral larvae during the 2018 coral spawning, I also received one of the prestigious Student Prizes for my seminar presentation. Alongside opportunities for networking, receiving feedback on my work and attending seminar presentations, a Student Coral ID workshop and field trips to swim with the iconic Ningaloo whale sharks were also available in conjunction with the conference. This gave me a once in a life time chance to experience and learn about the unique reefs and megafauna of the Ningaloo Reef National Park first hand.



Mikaela  
Nordborg

## AIMS@JCU award recipients

Round 1 for 2019

Congratulations to all of the students who were successful in their applications for the following awards. Look out for summaries of their travel and research in future newsletters:

### Science Communication Awards

(\$1,500 international and \$750 domestic)

**Ana Paula Barbosa-Martins** 5th International Conference on Fish Telemetry - Arendal, Norway (24-28 June 2019)

**Bettina Glasl** Meeting Dr. Michael Wagner - Vienna (Austria) (March/April 2019)

**Mikaela Nordborg** Society of Environmental Toxicology & Chemistry Conference - Darwin (5-14 July 2019)

**Paul O'Brien** GRC - Animal-Microbe Symbiosis, Mount Snow, United States VT 15-21 (June 2019)

**Molly Scott** Fish Swimming Summer Course, University of Washington, USA (21 July - 23 August 2019)

### Pilot Research Awards

(\$1,000 each)

**Rachel Johns, Shiori Kanno, David Kulcsar, Shelby Marhoefer, Michaela Miller, Josephine Nielsen, Julia Saper, Simon Schnebert, Marko Terzin and Elien Versteegen**

### Joe Baker AMSA Awards

(1 year student membership to the Australian Marine Science Association in honour of Vale Joe Baker)

**Maxime Brooks** and **Blanche D'Anastasi**

### Second Round of AIMS@JCU Awards

We are now inviting applications for our second round of awards for 2019 - check out our website for more information.

The deadline for applications is 18th August 2019.

<https://aims.jcu.edu.au/>



Mikaela Nordborg

### AIMS@JCU staff member recovering well

Unfortunately our fantastic part-time staff member, Gemma Wickens, was involved in a major car accident in March. It's amazing that anyone survived the crash as you can see from the photographs. Gem has been through three surgeries on her spine and has spent a lot of time lying in a hospital bed over the last couple of months. I appreciate your patience with this late newsletter and perhaps some delays in my email responses as I've been heavily involved in making sure that Gemma has felt supported as her family is overseas (I'm sure lots of you will understand what that feels like). Gem is now back on Magnetic Island recovering and learning to trust her new and improved spine! I know you'll all wish her well. Thanks, Lauren.



### AIMS@JCU second commuter vehicle update

As most of you probably know by now, there is an AIMS@JCU vehicle leaving from the AVF in South Townsville in addition to our JCU campus based vehicle. There is an extra step involved in becoming a registered driver, so get in touch with us if you want any further information.

All AIMS@JCU student members can book a seat in either vehicle online at <https://aims.jcu.edu.au/members/booking/select/>.

### 2018 AIMS@JCU end of year gathering

Thank you to everyone who came to our end of year gathering which we held at the Loft Bar (upstairs at The Seaview Hotel on the Strand). It was a really lovely evening and a good mix of students and supervisors from both AIMS and JCU came along. We hope you all value these networking and social events as much as we do.



### 2019 AIMS@JCU Date Claimers:

#### Student Seminar Day - 8th November 2019

Remember that this is a compulsory event for AIMS@JCU PhD scholarship students - you are required to present each year and by the end of your degree you must have completed at least one of each of the following: a 12 minute seminar talk, a 3 minute speed talk and a poster presentation.

Great prizes are also available for our photography competition, so make sure you are stockpiling your images. We're really looking forward to seeing you there to participate or to support your peers, it's always a wonderful day.

#### R-Course - weeks commencing 2nd & 16th September

This popular course run by Murray Logan from AIMS will be run in September prioritising AIMS@JCU students and then on a first come, first served basis for other AIMS@JCU members. Registration details will follow by email.

This course runs for a week (2nd-6th September), then has a week off and then runs for another week (16th-20th September).

Mikaela  
Nordborg

## Research Director Report

It was certainly an eventful start to the 2019 academic year with drought breaking floods. I know that some of you were significantly impacted by that event, and hope things have now settled.

Welcome to all new AIMS@JCU members – especially the 2019 scholarship recipients. Almost all of you are now arrived in Townsville and I look forward to following your PhD journey. Of course many of our new members are doing Masters or work experience placements – welcome to you too. It's always so satisfying to celebrate the success of our members as they grow into competent researchers. We recently celebrated our 109th AIMS@JCU PhD completion, but our work in supporting you is actually much more about supporting your journey. So don't forget to use the AIMS@JCU office as a resource for any issues or problems. If we can't help, we can connect you with the relevant resource either at JCU or AIMS. We also love it when you pop in to say hello!

The current AIMS@JCU agreement is up for renewal, and I have been busy compiling statistics about the success of AIMS@JCU as we prepare to negotiate a new agreement looking forward. I'd love to hear from any of you about ways that we could improve the program, so please feel free to email us your ideas.

Thanks to everyone who participated in the doodle poll to help set the date for our seminar day this year. The best available date is quite late in the year (8th November) so we have decided to combine it with our annual end-of-year gathering. Make sure you mark the date in your calendars and keep it clear for what promises to be a wonderful scientific and social event.

Last year we mourned the passing of Professor Joe Baker – a great champion for AIMS@JCU. I was pleased to learn that a reef has now been named in his honour. Joe Baker Reef is an outer reef in the Mackay-Capricorn management area of the GBR. This is a very fitting tribute to someone who contributed so much to science, management and protection of the GBR.

Congratulations to previous AIMS@JCU Research Director, Dr Michelle Heupel on her appointment as Director of the Integrated Marine Observing System (IMOS). This is a true endorsement of Michelle's stakeholder engagement track record, leadership skills and research impact. We will keep in touch as AIMS@JCU researchers access various IMOS data streams and products.

Stay tuned for the next scholarship round for PhD projects commencing in 2020.

Libby Evans-Illidge, AIMS@JCU Research Director

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