



December 2019

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AIMS@JCU Awards: Round 2 for 2019

Congratulations to all of the students who were successful in their applications for the following awards:

Science Communication Awards

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

Christopher Brunner; Stephanie DiPerna; Rodrigo Gurdek ICRS - Bremen, Germany (July 2020)

Marites Canto Canberra (CSIRO & Geoscience) & Brisbane (UQ) - collaboration in final year (September 2019)

Bettina Glasl; Emma Marangon ISME Conference - Cape Town, South Africa (August 2020)

Luke Morris Hong Kong Uni - collaborate with David Baker (late 2019)

Mikaela Nordborg For open access publication

Paul O'Brien Shenzhen, China - collaborate with Beijing Genome Institute (early 2020)

Marina Santana Ocean Plastics Congress - Melbourne (1 - 8 December 2019)

Pilot Research Awards (\$1,000 each)

Alexandria Terrell and **Geoffrey Yau**

Look out for summaries of their travel and research in future newsletters.

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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

Dharini Jha

Project title - Investigation into Artificial Intelligence Methods for Hyperspectral Image Analysis in Coral Reef Science Applications.

Dharini Jha completed her Bachelor's in Electronics and Telecommunication Engineering and Master's in Remote Sensing from Birla Institute of Technology, India. Her area of interest is Remote Sensing, Geographic Information System, Satellite Navigation and Digital Image Processing. Her noteworthy past experiences include her attachment to the Indian institute of technology, Kharagpur (IIT) and Banaras Hindu University, India as a Research Assistant for two years. This opportunity to work closely with some of the brightest minds at few of the most premium institutes in India allowed her to gain extensive theoretical as well as practical knowledge in the field of remote sensing and GIS based researches. She has enrolled a PhD under the AIMS@JCU 4-year program under the supervision of Dr. Karen Joyce (JCU), Dr. Jonathan Kok (AIMS), Dr. Manuel Gonzalez-Rivero (AIMS) and Dr. Mia Hoogenboom (JCU).

Her research project aims to investigate the use of advanced artificial intelligence (AI) methods for hyperspectral image analysis in coral reef science applications. Recent technological advancements have made it possible to break through the major hindrances which initially denied the extensive application of hyperspectral imaging into the marine sciences research. The spatial and spectral nature of hyperspectral data now allows effective employment of more aggressive AI methods thus providing more accurate information on species, stress state, material type or other aspects relevant to marine health. The outcome will provide actionable information on broad-scale community diversity, species, stress state, material type or other aspects relevant to marine health across the Great Barrier Reef.



Christopher
Brunner

AIMS@JCU student workshops

2019 Writing Retreat

This year AIMS@JCU hosted its first Student Writing Retreat on Magnetic Island with great success. We trialed a mixture of Pomodoro sessions and work swaps (for editing), with mindfulness sessions, exercise classes and social events. The feedback was overwhelmingly positive, so we'll definitely be running writing retreats in the future, hopefully as a regular event. As a result of the retreat, students wanted to continue with the Pomodoro 'shut up and write' style sessions, so conference room 1 is booked every Tuesday morning from 8.30-10.30am for this purpose. It is self-run so please feel free to drop in, or even to organise a Zoom meeting so that you can attend even if you're not physically at AIMS. Thank you to everyone that was involved in making this such a fabulous event.



2019 R-Course

The AIMS@JCU R-Course with Murray Logan was run weeks commencing Monday 2 September and Monday 16 September at the JCU city campus. The course remains popular and will continue to be organised in the second half of each year. Thanks to Mel for all of her organisational skills which make this course possible and ensure that it runs smoothly.

Christopher
Brunner

AIMS@JCU student seminar day

8th November 2019

The 2019 AIMS@JCU Student Seminar Day (combined with the end of year function), at the Townsville Yacht Club was, as always, a wonderful event. The winners are listed below and the calibre of presentations was very high. Judges this year were Lyndon Llewelyn, Hugo Harrison, Peter Doherty, Traceylee Forester, Craig Humphrey, Gemma Wickens, Laretta Grasso and Libby Evans-Illidge. Session chairs were AIMS@JCU students Bettina Glasl, Sam Matthews and Stacy Bierwagon.

Consistent with the new AIMS Indigenous Partnerships Plan, all presenters were asked to identify the Traditional Owners of the place where their work took place, and acknowledge them. It was pleasing to see the large extent to which this was embraced by all presenters. Thank you to AIMS Indigenous Partnerships Coordinator Traceylee Forester who made herself available to assist students with this request when they were unsure who the TOs were. Due to the last-minute cancellations of our planned alumni keynote talk, Traceylee agreed to step into that role. She provided an informative and insightful keynote speech – this led to some very heartfelt questions and responses between Traceylee and the students, which will hopefully foster a positive relationship going forwards.



Christopher
Brunner

Congratulations to all of the winners and well done to everyone that presented. It's such a great event and is wonderful when all of the hard work organising pays off. The AIMS@JCU family continues to grow and support each other, thank you for being a part of it.

AIMS@JCU student seminar day winners

Seminar Talks:

First: **Bettina Glasl** \$1,500

Runner Up: **Blanche D'Anastasi** \$1,200

People's Choice: **Bettina Glasl** \$600



Speed Talks (3MT):

First place: **Julia Saper** \$1,000

Runner up: **Christian O'Dea** \$800

Recommendation: **Sam Matthews**



Christopher
Brunner

AIMS@JCU Student Seminar Day winners

continued

Posters:

First: **Bettina Glasl** \$800

Runner Up: **Mikaela Nordborg** \$600



Photography/imagery \$100 each

Quantitative Marine Science: **Bettina Glasl**

Research in Action: **Christopher Brunner**

Research Subject: **Mikaela Nordborg**

Photomicrograph/Macro: **Christopher Brunner**

People's Choice: **Christopher Brunner**

The beautiful images from this competition are on display outside the AIMS@JCU offices on the 1st floor of building 17 at JCU. We look forward to next year's seminar day as it's always a highlight of the AIMS@JCU calendar.

Christopher
Brunner

Where are they now?

Dr. Molly Scott

Molly Scott recently completed her PhD at JCU, Townsville. For her thesis, Molly investigated the influence of increasing ocean temperature on the movement patterns and foraging behaviour of the common coral trout, *Plectropomus leopardus* on the Great Barrier Reef. To answer her thesis questions Molly spent a lot of time in the field using acoustic telemetry and *in situ* observations to identify: home range and movement patterns, daily habitat use, swim speed and foraging habits of coral trout. Since *Plectropomus leopardus* are a very economically and ecologically important species, Molly's results were able to be translated into precise management applications.

Since successfully completing her PhD, Molly has taken up a job with the National Oceanic and Atmospheric Administration (NOAA) in Hawaii. Molly is based in the Fisheries Research and Monitoring Division and her job involves collecting and analysing acoustic telemetry data from fisheries bycatch, in order to put forward bycatch mitigation strategies for commercial and international fisheries in the Pacific. Molly is very excited for the next stage of her career using science to inform sustainable fisheries management strategies across the Pacific and hopefully around the world.



Christopher Brunner

Research Director Report

What a busy year 2019 has been! We've fitted in lots of science communication events as well as student centred initiatives and hope that you've been able to enjoy what AIMS@JCU has had to offer.

Thank you to everyone that acknowledged the traditional owners for their Student Seminar Day presentations - let's continue that as a standard practice. If you need any advice in this area, please do contact AIMS Indigenous Partnerships Coordinator Traceylee Forester (t.forester@aims.gov.au) and she will do her best to point you in the right direction.

AIMS@JCU students are continuing to pass milestones with the following students being awarded their PhD's this year:

Molly Scott, Gobalakrishnan Subashchandrabose and Tiffany Sih (degrees to be conferred at the next graduation ceremony in March 2020). Those conferred in absentia by the University Council are Leela Chakravarti and Michael Jarrold. Several additional students have submitted their theses which are currently under examination - good luck!

AIMS@JCU is offering four 4-year PhD scholarships again this year, so please welcome the new students to our AIMS@JCU family when they start in 2020.

The AIMS@JCU office will be manned on and off throughout the rest of December and through January 2020, so please be patient - we'll get back to you as soon as we can.

We hope you have a fun and safe holiday season, we're looking forward to working with you again in 2020.

Happy holidays from Lauren, Melissa and myself,
Libby Evans-Illidge, AIMS@JCU Research Director

Contact: e.evansillidge@aims.gov.au

Christopher
Brunner