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AIMS@JCU Student Seminar Day 2016

On 16th September, AIMS@JCU held another hugely successful seminar day, this year at the Museum of Tropical Queensland, Townsville.

Well done to all of the presenters, as always the standard was exceptionally high and it was a very well attended event.

Congratulations to the winners who received funding to put towards science communication:

1st place seminar talk presentation (\$1,500):

Cecília Pascelli

Runner up seminar talk presentation (\$1,200):

Gerard Ricardo

1st place speed talk presentation (\$1,000):

Kathryn Berry

Runner up speed talk presentation (\$800):

Carlos Bohorquez Rueda

1st place poster presentation (\$800):

Brian Strehlow

Runner up poster presentation (\$600):

Samuel Matthews

Photography prizes were won by Brian Strehlow, Kathryn Berry, Cecília Pascelli and Danilo Malara.

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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:

Editor: Lauren Gregory

Phone: (07) 4781 4074

Email: aims@jcu.edu.au

AIMS@JCU Student Seminar Day 2016

continued



Photograph courtesy of Patrick Buerger

A big thank you to the judges: Peter Doherty, Yvette Everingham, Richard Brinkman, Hayley Gorsuch, Richard Davis, Catherine Naum and Helene Marsh; to the chairs: Elodie Ledée and Gemma Wickens; and to our key note alumni speaker: Chiara Pisapia.

Just a reminder to all AIMS@JCU students who are using AIMS resources, are supervised by an AIMS staff or on an AIMS@JCU scholarship to please acknowledge AIMS@JCU in your attributions.

Here are our winning photographs for 2016:



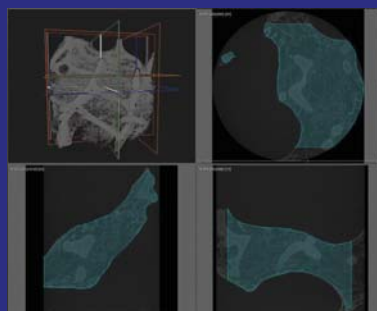
Danilo Malara - Research in action
[Fishing and tagging swordfish]



Kathryn Berry - Macro/ Photomicrograph
[This red bulbous anemone stood out on an otherwise boring pile of rubble]



Cecilia Pascelli - People's choice
[Anemone and the Psychedelic Dance]



Brian Strehlow - Quantitative Marine Science output [Sediment particles (orange) inside sponges measured using 3D image processing software (Avizo Fire)]



Kathryn Berry - Research Subject
[Numerous sponges compete for space at this highly biodiverse reef]

Kathryn Berry

2016 PhD Scholarship recipients

Marites Canto

Marites completed her MSc degree in Marine Science (Physical Oceanography) at The Marine Science Institute, University of the Philippines in 2005 where she also worked as a Research Assistant before moving to Australia in 2007. Her MS Thesis focused on the estimation of entrainment potential in Philippine coastal waters: the physical consequence of island wakes and eddies with particular application to the design and management of marine protected areas in the Philippines. She also gained strong experience on using hydrodynamic circulation and models in understanding how coastal habitats are linked with each other (e.g., transport of larvae and entrainment of particles or materials) alongside her mentors.



More recently, she worked as a Research Assistant at GPEM – Remote Sensing Research Centre at The University of Queensland. She was part of the UQ Biophysical Oceanography Group that works closely with the Ocean Biology Processing Group (OBPG) at NASA in developing products and applications of satellite data in coastal ocean studies. Here, she gained a wide experience in remotely sensed satellite data processing (i.e., large volume of temporal and spatial satellite datasets); software development with

particular application in satellite oceanography; and provided support to a number of collaborative projects that link the oceanography and the biological response, both in regional and local ocean processes. She also provided teaching support to GPEM Marine Science course where she taught the students how to use NASA-OBPG's SeaWiFS Data Analysis System (SeaDAS).

Marites has recently commenced her PhD entitled Benthic light (bPAR) as an ecologically-validated GBR-wide indicator for water quality: algorithm development, under the supervision of Katharina Fabricius (AIMS), Yvette Everingham (JCU), Lachlan McKinna (SAIC / NASA GSFC) and Stuart Phinn (UQ). Her PhD project aims to develop a new satellite algorithm to derive benthic irradiance (the amount of light that reaches the seafloor) from imagery collected by NASA's MODerate Resolution Imaging

Kathryn Berry

2016 PhD Scholarship recipients

Marites Canto continued

Spectroradiometer (MODIS). Once developed, the algorithm will be validated against in situ benthic irradiance measurements. A near-daily satellite-derived benthic irradiance dataset encompassing the entire GBR and the far north will be developed that will span approximately 14+ years. This spatiotemporally rich dataset will be used to assess region-specific drivers of trends in benthic irradiance including river discharges and other physical ocean processes. Marites, together with Katharina's research group, aims to develop an ecologically validated GBR-wide water quality indicator that is based on the new benthic light product.

Contact: maritesmcanto@gmail.com

2016 PhD Scholarship recipients

Jose Montalvo-Proaño

Jose completed his Bachelor of Science in Biotechnology Engineering with Honours in 2013 in Ecuador. His honours research focused on the potential hybridization of two endemic tree species (genus *Polylepis*) at different locations along the Ecuadorian Andes Mountains. His work had important implications for conservation of endangered forests and provided a unique experience due to the involvement with local communities.



Different internships programs, and a deep love for the ocean, convinced him to switch to Marine Sciences. During 2014-2015, Jose completed his Master of Science in Marine Biology at James Cook University together with the Australian Institute of Marine Science. His research, under

the supervision of Prof Madeleine van Oppen (AIMS), Prof Bette Willis (JCU) and Dr Karen Weynberg (AIMS), focused on the development of alternative low-cost methods to target ssRNA-like viruses in corals, likely targeting their Symbiodinium in order to understand their potential link to bleaching events.

Kathryn Berry

2016 PhD Scholarship recipients

Jose Montalvo-Proaña continued

This year, Jose started his PhD under the supervision of Prof Madeleine van Oppen (University of Melbourne/AIMS), Prof Phillip Munday (JCU), Dr Neal Cantin (AIMS) and Dr Greg Torda (JCU). His project will investigate the capacity of corals to cope with rapid changes in their environment, by evaluating the importance of non-genetic inheritance of acquired stress tolerance from the parental generation following pre-conditioning to ambient and future stress conditions, across successive generations of offspring. To date, epigenetic mechanisms in corals have been described only in a few studies and a lot remains unclear. Therefore, his research has important implications and aim to generate insights about the role of epigenetics in the rapid acclimation of corals. Part of his research (Bioinformatics analysis) will be carried out at King Abdullah University of Science and Technology (KAUST) in Saudi Arabia, in a cotutelle degree program with JCU.

“It is not about fame, it is about working together with nature, while enjoying and doing something worth it” – JM

Contact: joseluis.montalvoproano@my.jcu.edu.au
J.MontalvoProano@aims.gov.au

Science Communcation reports

Danilo Malara

In July 2016, I participated to the NZMSS-AMSA conference in the New Zealand capital city, Wellington. The general theme of the conference, Sharing Ocean Resources: Now and in the future, attracted many marine scientists from Australasia. Despite the high number of presenter, I was able to be selected for the oral talk. My presentation, as part of my PhD thesis, investigated the utilization of photosensitisers to inactivate prawn pathogens. I coped with some questions and observation that help me to improve my work. The conference was a good place were networking with other scientist from Australia and New Zealand. I was really happy to meet, in the other part of the word, people that come from your same region and studied in my first University.

This conference was a great networking platform, establishing possible collaborations and improving my knowledge on topic. Thanks to AIMS@JCU, I was able to attend and present my work as well as networking with other scientists.

Contact: danilo.malara@my.jcu.edu.au

Kathryn Berry



Science Communication reports

Jordan Matley

The AIMS@JCU Travel Funding Award provided financial assistance to attend the International Coral Reef Symposium (ICRS) in Hawaii this past June. I am grateful for the funding provided by AIMS@JCU because this conference was at the forefront of research concerning organisms associated with coral reefs. I presented a synopsis of my PhD thesis exploring spatial and temporal resource partitioning between sympatric species of coral trout (*Plectropomus* spp.). Not only was I able to see a variety of presentations investigating niche specialisation using stable isotopes and movement patterns using acoustic telemetry (both key components of my PhD), I had the opportunity to speak with expert researchers in those fields. This networking capacity afforded the chance to share ideas and methodological approaches which I found incredibly useful. It was also exciting to meet other students from around the world doing similar research. From both academic and career perspectives, the ICRS in Hawaii was a wonderful experience, something that was not possible without the assistance and support from AIMS@JCU.



Kathryn Berry

Contact: jordan.matley@my.jcu.edu.au

Where are they now?

Martino E. Malerba

After handing in my thesis in December 2017, I started a postdoc with Prof. Dustin Marshall in the Marine Ecology and Evolutionary Group at Monash University in Melbourne. My PhD thesis dealt with modeling nutrient utilization of phytoplankton species. For my postdoc I am continuing working with phytoplankton, this time rearing species in the lab to test ecological and evolutionary theories. The overall aim of the project is to determine some of the connections between evolutionary changes in the anatomy and morphology of a cell and their repercussion for the ecological fitness of the species.

I joined a large research group at Monash university. His leader, Prof. Dustin Marshall, is a brilliant scientist and an inspirational person. His ability to bring out the best in students and coworkers are the foundations for the success of the team. The interest toward ecology and evolution are the common features of the research in the lab, explored with a wide range of different approaches, ranging from meta-analysis, to laboratory and field experiments. Members of the lab routinely commute to dozens of study fields around Victoria and Queensland, while also mastering the techniques to rear a multitude of marine species in laboratory conditions. I am thrilled to be part of such a remarkable group of people.

A new chapter of my life just began. I am thankful of the great opportunity that I was given. I will always be glad to those that helped me during my PhD at James Cook University. AIMS@JCU was indeed a key contributor. Not just for kindly providing a scholarship and research funds, but also for organizing a long list of events to promote my research and to meet people who share the same passion for the field. In particular, I will never forget the AIMS@JCU postgraduate conference in 2013 in Townsville. Not just I was lucky enough to win the first prize for best oral presentation, but I also happened to meet for the first time Maria del Mar Palacios, my beloved partner here with me in Melbourne. That night was very special for me!

Contact: Martino.malerba@gmail.com

Kathryn Berry

Research Director report

I would like to wish my congratulations again to the winners of yet another fabulous seminar day (listed at the front of this newsletter). Thank you to all of the wonderful presenters, the judges and to Lauren and Mel for organising this very successful day.

AIMS@JCU alumni Joe Pollock has been receiving accolades for the very successful ATSIMS program which he established. ATSIMS won a 2016 Queensland Reconciliation award, and the US Ambassador to Australia singled Joe and ATSIMS out at an address to the National Press Club. Joe was an invited guest to Secretary of State John Kerry's 'Our Oceans Conference' held in Washington DC, where he represented ATSIMS and AIMS@JCU support at this event.

We have implemented an initiative to support the mental health of AIMS@JCU students through mindfulness training. A four week (2hrs/week) course was delivered at JCU and was offered to all AIMS@JCU students and staff with costs covered. A total of seven AIMS@JCU students and staff took up this opportunity, and as a result of very positive feedback, we are likely to run this course again in the future.

This month, we are facilitating three workshops to provide an introduction to an ESRI suite of GIS products. These workshops will provide an introduction to these products and how to use them, in addition to good data management practices.

The 2017 scholarship application round is upon us, best of luck to all of the students who have applied for our competitive PhD scholarships which focus on quantitative marine science.

All AIMS@JCU members are invited to attend the AIMS Social Club Christmas gathering which will be held upstairs at the Brewery, Flinders Street on 9th December from 5pm onwards.

Enjoy your festive season, please note that the AIMS@JCU office will be closed between 20th December and 10th January.

Libby Evans-Illidge, AIMS@JCU Research Director

Contact: e.evansillidge@aims.gov.au

Kathryn Berry