

Christopher Brunner

March 2018

VOLUME 14, ISSUE 1

Congratulations to our new graduates!

One of the highlights of the AIMS@JCU calendar is definitely graduation day. It is the day that marks and celebrates the achievements of candidates and their supervisors. It is also great to hear AIMS@JCU's role acknowledged as each student's thesis abstract is read out at the ceremony. Since the last graduation, nine of our students have graduated with their PhD, although only two were able to be present at the ceremony: Kathryn Berry, Patrick Buerger, Geoffrey Collins, Mike Emslie, Tessa Hempson, Clair Stark, Peter Morse, Danilo Malara and Katia Nicolet. Congratulations to these now-alumni and their advisors. Each of these PhDs represents an important collaboration between AIMS and JCU. In addition to our JCU graduates, congratulations to three of our associate student members who also graduated: Gerrard Ricardo, Pia Bessell-Brown and Brian Strehlow.



Clair Stark, Helene Marsh, Libby Evans-Illidge and Patrick Buerger (l-r)

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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.

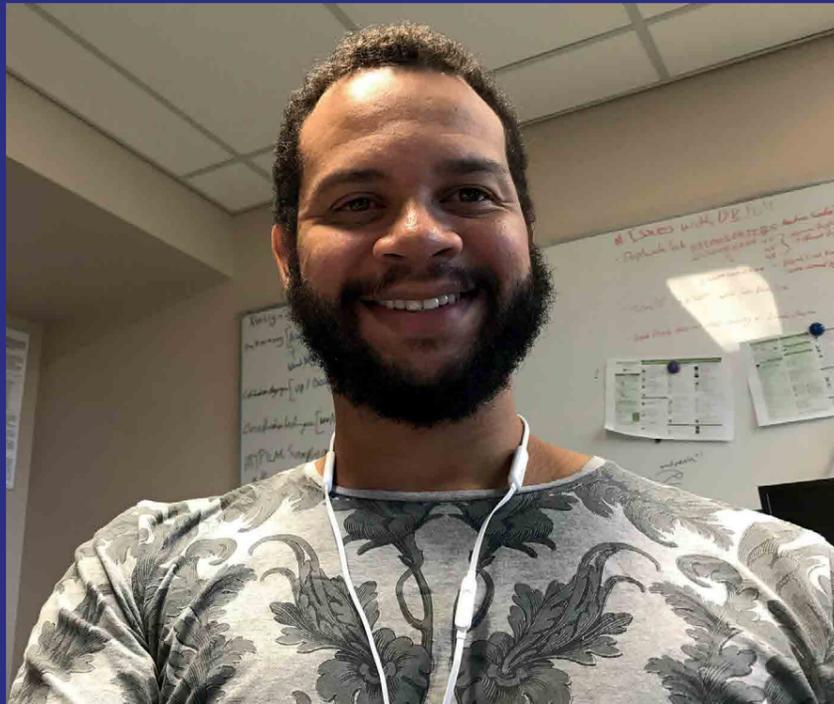
If you'd like to be added to our mailing list, or have a query regarding this newsletter, please contact:

Editor: Lauren Gregory
Email: aims@jcu.edu.au

2018 PhD Scholarship recipient

Vinicius Santino Alvez

Vinicius has commenced his PhD research with AIMS@JCU, to develop machine learning techniques to mine oceanographic data. He aims to develop forecasting methodology for extrapolating data on different timescales; analyse and understand the relationships between different oceanographic, water quality and ecosystem parameters in the tropics; investigate a machine learning approach to automate a process for the quality control of oceanographic data by flagging anomalies and outliers, and develop an approach and implement an artificial intelligence technique to the task of data gap interpolation.



His supervisors are Prof Ricardo Campello (JCU), Dr Paul Rigby (AIMS), Prof Ickjai Lee (JCU), and Dr Oleg Makarynsky (AIMS). Vinicius' project and his supervisory team represent a brand new AIMS@JCU collaboration.

Vinicius comes to Townsville from Brazil. He completed a Masters in Informatics from the Catholic University of Santos in 2007, with research on data mining and computational intelligence. His Masters thesis developed computationally efficient algorithms for clustering based in evolutionary algorithms. Since then he has worked as a technology consultant and entrepreneur for 10 years.

Contact: vinicius.santinoalves@my.jcu.edu.au

Mikaela Nordborg

Welcome to the new AIMS CEO

Dr. Paul Hardisty

Dr Paul Hardisty commenced as Chief Executive Officer of the Australian Institute of Marine Science on 24 July 2017. An honours graduate in Geological Engineering from the University of British Columbia, Canada, he has a Masters in Hydrology, and a Doctorate in Environmental Engineering, from Imperial College, London. He has been a Visiting Professor in Environmental Engineering at Imperial College, London, since 1999 and is an adjunct Professor at the University of Western Australia. Dr Hardisty has worked extensively in marine and coastal environments and on marine research projects, with many of the stake holder and customer groups that AIMS deals with. He has substantial experience of both the public and private sector. He was the founder, owner and leader of Komex Environmental Ltd, an international environmental consultancy, built from start-up to a \$50 million pa turnover company with a thousand employees and sold to the engineering services company Worley Parsons, in 2006. From 2006-2013, Dr Hardisty served as Global Director, Corporate Responsibility and Global Director, Sustainability and Economics for Worley Parsons. In 2013, Dr Hardisty joined CSIRO, initially as Flagship Director, CSIRO Climate Adaptation Flagship, and more recently, as Business Unit Director, CSIRO Land and Water.



Hannah Epstein

- **Vale Professor Joe Baker:** Since the last newsletter went to print, we have lost a very special person. Joe Baker was an amazing man and his many achievements have been sent in emails and print around the marine science community. From our perspective in the AIMS@JCU office (and that of people I have spoken to outside of that), we are sad to lose Joe Baker as a beautiful person. He always made time to be polite and respond to questions. He sponsored our student memberships of AMSA out of his own pocket for many years because he placed a high value on new students getting exposure to top quality science. From a personal point of view, he always thanked me for sending him the AIMS@JCU newsletters and said how much he enjoyed reading them. His son even took over replying to me when he was too ill last year to write himself. He made sure he added personal messages and I will certainly miss sending this newsletter to him. Thank you Joe for all that you have given AIMS@JCU and also myself. Best wishes and deepest condolences to Val, Russell, Sharyn Tracey and Rohan and their families, and all of Joe's friends and colleagues whose lives he touched. With fond memories, Lauren.
- **Distinguished Professor Helene Marsh:** AIMS@JCU is also losing its longest standing Committee member! Helene is stepping down from her position as Dean of the Graduate Research School and subsequently as the JCU AIMS@JCU Management Committee member. We would like to pay tribute to Helene's contributions to AIMS@JCU since its establishment as an unincorporated joint venture back in 2003, when she helped guide the establishment of the original Joint Venture and then served on the board of management until the conclusion of the special allocation of funding in 2010. It was at this point that Libby took over the role of Research Director, and we are grateful for Helene's guidance as AIMS and JCU designed the current 'lite' model with direct co-funding between the parties, to continue what was arguably the most effective component of the venture - joint HDR training. We are also grateful for the tight partnership that Helene has facilitated for us with the GRS, and also for the advice and wisdom to help us bridge the 'culture' gap between AIMS and JCU which has been so pivotal to our success.
- **Professor Christine Bruce:** A warm welcome to Professor Christine Bruce who has taken over as both Dean and the JCU member on the AIMS@JCU Management Committee. We look forward to working with Christine in both roles, look for her bio in the next newsletter.

Ian's Background:

Ian is an AIMS@JCU alumni who graduated with his PhD in 2015. He is now a Senior Research Scientist at JCU and runs over a million dollars' worth of projects. He is also Director and Co-Founder of Cinematic Science - a media company based in California and Queensland that assists post-graduate students tell their stories through video, social media and virtual reality. Ian is passionate about supporting PhD candidates to focus on the transferrable skills that are most likely to get them a job in the future. He recently shared some pearls of wisdom in an interview with Lauren Gregory - these are summarised below (and do not necessarily (always) reflect the opinions of AIMS@JCU). Many thanks Ian for your valuable insights!

General tips about PhD candidature:

- Make sure your PhD project is achievable, and do everything you can to keep it achievable.
- Look at the average completion times in your lab as a realistic guide to the likely timeframe for your project, and make sure you manage your time.
- Plan your finances for the whole length of your PhD. Think about life events that will need to be managed with very little money, e.g. marriage and children. Earn money where possible, live within your means and know that there will be times when you are really poor!
- Be responsible for your own project expenditures and budget allocation, and don't become a leach on others.
- Think about the possibility of having a PhD marriage! Join up with someone working on something similar to you, co-publish, pool money, but have everything in writing to protect yourself.
- Find mentors outside the university. Choose your mentors by looking at the whole package of a person - for example, are they healthy and happy?
- There can be great value in volunteering your time to colleagues and your organisation and you can gain valuable experience. However, don't do too much work for free. Value your time and give yourself an hourly rate (e.g. \$25) when considering requests for unpaid favours. When considering these requests, think about what you will get out of it - for example, will the activity benefit your CV? If so - this might justify doing it once but not continually. Set limits on the favours you do, and when

PhD tips from a successful alumni member

Ian McLeod - continued

requests come to you, practice asking “Do you have a budget for that?”. This simple question can change the dynamic of the relationship and help ensure you don’t get exploited!

- Focus on development of transferable skills rather than specific research goals. Rather than, “What do I work on?” think about “What skills do I have?” At the very least, you will develop skills in critical thinking, problem solving, and project management.
- Engage in politics and sales (even if you don’t like it!), or build a team with someone who can do that. Get an ABN so you can invoice quickly and easily.
- Value yourself as a professional, dress appropriately and conduct yourself well. It’s a small world (Ian is still working with several of his student cohort). Your student cohort is the basis of your future network, know that AIMS@JCU alumni are the future leaders. Have fun but find a good balance of fun and professionalism. Embody self-confidence and self-worth and be assertive.
- Have an online presence, this includes your email signature - e.g. LinkedIn, Instagram, crowd funding - choose a couple and keep them up to date. Google yourself and make sure you’re happy with what comes up at the top of the search!
- Plan to travel home especially if you’re not from Australia. You might have to take unpaid time off.
- Develop a thick skin for criticism - expect it! But also call out bullying or bad behaviour. How you are treated makes a difference so recognise that and make a plan for it.
- Nurture your mental health. Your PhD will be a rollercoaster of emotions and challenges. One third of PhD candidates end up with a diagnosed mental health issue at some point during their PhD, so if you find yourself struggling to cope remember this is just a normal response and do something to help yourself. You can seek advice from AIMS@JCU or the GRS, and access counselling support from JCU and through the AIMS Employee Assistance Program (EAP).

Make the most of your supervisory team

- Treat the relationship with your supervisors as a professional one - a business arrangement. Make sure that it works for you and your goals, not just the goals of your supervisors.
- Negotiate with your supervisors for a candidature plan consistent

PhD tips from a successful alumni member

Ian McLeod - continued

with your long-term plans and aspiration. Have conversations early about publications and professional development. Many supervisors prioritise publication of chapters prior to completion of the thesis. However, if you’re not planning on being an academic publications are less important than getting work experience or paid work.

- Put everything in writing. Send a bullet-pointed email after every meeting summarising what you think were the main agreed points, plans and expectations.

Preparing for the future research world after your PhD

- At the moment, it can feel like old, white men rig the game! The scales are tipped towards those wanting to become a professor and publish in Science and Nature. You need to think innovatively to change the game and to help you move forward. They won’t be the ones in control forever!
- Think of the Traditional Owners and the needs of indigenous people in the area you are researching.
- Consider applied research and other publication options – the speed of publishing is important, keep it fun and keep momentum.
- Try working on a cloud, this keeps everyone working together and accountable.
- Think about impact and engagement. Submit opinions or reviews for publication in addition to specific, quantifiable papers.
- Take photographs during fieldwork, especially when you’re tired! Record the location, set-up, study species, experiment.
- Use videos and consider producing video content for public platforms. It takes lots of work to recreate experiments etc, there are videos on YouTube for everything else, why not for this?!
- Develop a strategic network. Think about who you would like to work with and find specific mentors. Put more effort into less people. Don’t forget to network horizontally (e.g. alumni from AIMS@JCU), because they are the people who are going to be around for your whole career. Put work and time into your colleagues, not just into the old professors who are at the other end of their careers. There is a generation gap, so think about where people will be in five years’ time. Who will be in positions of influence?

Research Director Report

Amongst his personal reflections on making the most of your PhD candidature, AIMS@JCU alumni Dr Ian McLeod stresses the importance of looking after your mental health. This is good advice, because it is an unfortunate reality that doing a PhD is stressful! A recent article in nature (Evans *et al* 2018 in Nature Biotech 36) estimates that the rates of depression and anxiety amongst higher-degree research students is 6 times higher than in the general population! So, if you find yourself feeling overwhelmed and experiencing some of the symptoms – don't panic. Know that you are pretty normal, but also take advantage of the support that is available to you, to help you get through any stressful pain-points.

- Practice mindfulness. Do a course (such as those provided through www.mindfulworks.com.au) and/or install an app (I use www.headspace.com) and take time out of your day to practice, even if it is just for 2 or 10 minutes. Every year AIMS@JCU supports your participation in mindfulness courses, stay tuned for the next notice.
- Talk to someone. Have coffee with your mates, and access the free, confidential and professional counselling or psychology services through either AIMS or JCU via the contact information below. You don't need to be in crisis or dealing with a serious problem to access these services – I recommend you acquaint yourself with them early and often:
 - AIMS@JCU students can access the AIMS Employee Assistance Program. You can call 1300 361 008 24/7 to talk to someone and make an appointment with a local service provider. This program gives you 6 appointments per 'issue', with more available by arrangement.
 - All JCU students can access counselling services through the Student Equity and Wellbeing service in the library, by email studentwellbeing@jcu.edu.au or phone 4781 4711.
- If in doubt, come and see us at the AIMS@JCU office, and we can steer you towards the right support or help facilitate timely advice about candidature issues.

In conclusion – I want to add a note of gratitude on the retirement of Distinguished Professor Helene Marsh, for her incredible support for AIMS@JCU. Helene – thank you for your tireless, constructive, sometimes creative but always pragmatic advice, direction and mentorship through the years. I'm glad that you are not going very far away, and I look forward to your continued participation in the life of AIMS@JCU in your new role as Emeritus Professor, into the future.

Libby Evans-Illidge, AIMS@JCU Research Director

Contact: e.evansillidge@aims.gov.au

Mikaela
Nordborg