

AUGUST 2025

VOLUME 21, ISSUE 2

AIMS@JCU Student Award Winners

Round 2 2025

Congratulations to the successful recipients of our second round of AIMS@JCU awards for 2025:

Pilot Research Awards:

- Peter Lowley (Fieldwork at Florence Bay and Arthur Bay of Magnetic Island)
- Rana Elmesseri (Whole-Genome Sequencing of Endozoicomonas and Antimicrobial Defences in Heliofungia)

Science Communication Awards:

- Australian Coral Reef Society, Townsville, 2025:
 - » Ashoi Dantra
 - » Marko Terzin
 - » Lauren Beattie
- International Coral Reef Society Conference, NZ 2026:
 - » Grace Yarger
 - » Greta Zampa
 - » Rana Elmesseri
 - » Marine Pablo
 - » Alex Macadam
- Leo Chiu-Leung (AAS ACOUSTICS 2025, WA)
- Jha Dharini (AIMS@JCU Student Seminar Day 2025, Townsville)
- Nicolas Mafla Viscarra (Society for Marine Mammalogy Conference 2025 Puerto Rico)

Professional Development Awards:

- Greta Zampa (Specialised training in macroalgae taxonomy)
- Rana Elmesseri (Specialised training in PacBio metagenomics analysis)
- Marine Pablo (Marine Radio Operators Certificate of Proficiency (VHF))

Look out for their write-ups in future newsletters.

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

We are reducing our carbon footprint by limiting the number of printed copies available. Please let us know if you need a hard copy of this newsletter

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:

Editor: Lauren Gregory

Email: aims@jcu.edu.au

Website: www.aims.jcu.edu.au

2025 AIMS@JCU PhD Scholarship Recipient

Rayhan Dudayev

Project Title: Integrating Traditional Knowledge in Co-Managed Marine Conservation: Implications for Distributional and Procedural Equity

Supervisors: Dr. Georgina Gurney (JCU), Dr. Sarah Lawless (JCU), Libby Evans-Illidge (AIMS), and Prof. Simon Foale (JCU)



Rayhan is a PhD candidate at James Cook University studying how traditional knowledge is integrated into marine conservation and how this relates to equity and climate policy. He has a background in law and marine affairs, with degrees from the University of Indonesia and Xiamen University. Over the past few years, Rayhan has worked in the field of marine conservation and

environmental policy, including with the Indonesian Center for Environmental Law, Blue Ventures, and Greenpeace Southeast Asia. His work has focused on small-scale fisheries, traditional knowledge, and environmental governance, particularly in Southeast Asia. Rayhan was born in Jakarta, Indonesia and is passionate about underwater activities including freediving, as well as social and environmental justice issues.

Rayhan is extremely thankful to have been awarded the AIMS@JCU scholarship under the supervision of Dr. Georgina Gurney (JCU), Dr. Sarah Lawless (JCU), Libby Evans-Illidge (AIMS), and Prof. Simon Foale (JCU). His research explores how recognitional equity—specifically the recognition of traditional knowledge held by Indigenous Peoples and local communities—relates to procedural and distributional equity in co-managed marine conservation. Using case studies in Indonesia and Australia, Rayhan's mixed-methods research will examine how traditional knowledge is recognised in both policy and practice, and how this recognition influences who participates in decision-making and how the costs and benefits of conservation are distributed. The findings will contribute to advancing equity theory, support conservation policy development, and improve equity outcomes in co-managed marine areas.

Patrick Buerger

Contact: rayhan.dudayev@my.jcu.edu.au

2025 AIMS@JCU PhD Scholarship Recipient

Matilde Drake

Project Title: Disentangling environmental drivers of coral recruitment: a comparative study of early coral life stages on artificial and natural substrates across the Great Barrier Reef.

Supervisors: Dr. Katharina Fabricius (AIMS), Dr. Mia Hoogenboom (JCU) and Dr. Carly Randall (AIMS)

Growing up with giant kelp forests in her backyard of California, Matilde became fascinated by the role of habitat builders and the challenges they face among environmental disturbances. Following this passion, she completed a Master of Science in Marine Resource Science, Conservation, and Innovation at the University Côte d'Azur (Nice, France). There she interned at the laboratoire ECOSEAS, studying *Cystoseira* restoration practices and stakeholder management. Matilde then conducted her master's thesis with Dr. Katharina Fabricius under EcoRRAP in 2023. This project investigated environmental and benthic community drivers of coral recruit densities on settlement tiles along the GBR, from the Torres Strait to the Capricorn Bunker reefs. Excitingly, a continuation of this work was recently published in Plos One "Current velocity, water quality, and benthic taxa as predictors for coral recruitment rates on the Great Barrier Reef".

Matilde is excited to be working alongside her advisory panel, which includes Dr. Katharina Fabricius (AIMS), Dr. Mia Hoogenboom (JCU), and Dr. Carly Randall (AIMS), and she is grateful to have been awarded the AIMS@JCU scholarship. Her PhD aims to further our understanding of environmental bottlenecks to coral juvenile survival, from micro- to cross-reef scales. This research will focus on the comparative success of juveniles on artificial and natural reef substrata, aiming to improve assumptions of artificial settlement surfaces as proxies to natural reef surfaces and to optimize coral seeding restoration.



Catalina Aguilar
Hurtado

Contact: matilde.drake@my.jcu.edu.au

2025 AIMS@JCU Postdoctoral Research Fellow

Dr Tomás León Cortés

AIMS@JCU David Mckinnon Postdoctoral Research Fellow – Modelling Coastal dynamics

Dr Tomás León Cortés is a coastal geologist and numerical modeller investigating the processes that shape Australia's dynamic shorelines. As an AIMS@JCU Postdoctoral Research Fellow, he advances knowledge of nearshore hydrodynamics and morphodynamics to support climate adaptation in ecologically and socially important coastal settings.



Tomás specialises in sedimentology and coastal hazards, with a focus on tsunamis and storm surges. He has conducted field and modelling research across northern Chile and northern Queensland. During his PhD at The University of Queensland, he used advanced numerical models to simulate sediment transport and coastal transformation linked to modern, historical, and

prehistoric tsunami events. His expertise includes high-resolution simulations of tidal and wave processes, sediment transport, and inverse modelling of past extreme events.

At AIMS, his research targets the northern Queensland coast, beginning with Cape Bowling Green and the adjacent Great Barrier Reef shoreline. He integrates modelling with tide gauge records, stratigraphic data, and sediment sampling to quantify shoreline change, trace sediment pathways, and assess geomorphic sensitivity to oceanographic and climatic drivers. This work informs both nature-based and engineered approaches to coastal adaptation.

Tomás also contributes to higher education through teaching and student supervision, particularly in natural hazards and coastal geomorphology. His research bridges field geoscience, modelling, and applied management, aiming to deliver practical outcomes for enhancing resilience along Australia's tropical coasts.

Contact: t.cortes@aims.gov.au

AIMS@JCU 20-Year Celebration

25th and 26th September



AIMS@JCU is celebrating 20 years of collaboration in 2025. We have put together a fabulous two day event which includes the annual AIMS@JCU Student Seminar, an alumni function, a trip to AIMS along with interactive panels.

Our seminar day takes place at James Cook University Bebegu Yumba campus, building 506, room 117. from 9.30am. This will be a fully catered day packed with high quality student presentations and followed by an evening of drinks and canapes to celebrate our alumni and current members. Come to support our student members presenting their cutting edge research using seminars, speed talks, posters and photographs.

Join us for a dynamic panel discussion featuring our AIMS@JCU Postdoctoral Fellows. From personal journeys to cutting-edge research, this is your chance to ask it all—whether it's "How did you get here?" or the bold questions that push scientific boundaries.

Day two will be fully catered and held at AIMS' Nilgoolerburdda site at Cape Ferguson, with transport to and from the institute provided (8.30am to 4.30pm). This exciting day will include talks from invited speakers, helpful information sessions for AIMS staff and AIMS@JCU students, insightful presentations and a "You can't ask that" panel. This is your chance to engage openly, respectfully, and. meaningfully.

Whether you're part of AIMS or JCU as staff, students, early-career researchers, or volunteers, this 2-day celebration promises connection, inspiration, and discovery. Don't miss your chance to participate.

See next pages for the schedules for each day.

Contact: admin.aims@jcu.edu.au

**Catalina Aguilar
Hurtado**

AIMS@JCU 20-Year Celebration

Day 1 - 25th September at JCU

Time	Title	Presenter/Chair
9.30am	Welcome to Country	Auntie Dorothy Savage
9.45am	Welcome & housekeeping, AIMS@JCU Research Director	Dr. Cherie Motti
10.00am	AIMS@JCU Executive Committee Welcome	Prof. Ron White & Dr. Kameron Christopher
	Session 1:	Dr. Vanessa Haller
10.15am	No Model Fits All: Dynamic SDM Reveals Seasonal Habitat Use of Ocean Giants	Ingo Miller
10.30am	Understanding the Spatial and Temporal Patterns of Marine Fauna in the Otway Basin using Marine Fauna Observer Data	Nicolas Mafla Viscarra
10.45am	Integrating microbial and viral responses to reef zoning measures in the Great Barrier Reef	Marko Terzin
11.00am	Responses of microbial gene expression to temporal and environmental factors at four IMOS microbial observatories	Grace Yarger
11.15am	Morning tea	
	Session 2:	Dr. Josephine Nielsen
11.45am	Strengthening monitoring of coral reefs and fisheries co-management in the Kingdom of Tonga	Myles Phillips
12midday	Transferring ReefSeed Coral-Seeding Technology to Remote Communities for Reef Restoration	Crystle Wee
12.15pm	The Sting of the Sea: Unveiling the Venom of the Fire Urchin <i>Asthenosoma varium</i>	Sina Ehlert
12.30pm	Spectral species concept in aquaria: Adapting a remote sensing algorithm for extreme close-range imaging of submerged algal biomass	Raf Rashid
12.45pm	RapidBenthos: extracting community composition from 3D photogrammetric models automatically	Tiny Remmers
1.00pm	Concurrent Autonomous Surface-Underwater Monitoring System: Geometric Dynamics and Nonlinear Control	Daniel Croul
1.15pm	Lunch	
	Session 3:	Dr. Mikaela Nordborg
2.15pm	Microplastics in the water column of Davies Reef, Great Barrier Reef: vertical distribution, concentration and characteristics	Lauren Beattie
2.30pm	Assessing the Impact of Macroalgae Removal and disturbance on Benthic and Fish Community Dynamics	Bambang Hermanto
2.45pm	AIMS@JCU ECR Collaboration Grant recipient	Dr. Kelly Condon
3.00pm	AIMS@JCU Post-doc panel	Dr. Line Bay
3.30pm	Posters, afternoon tea	
	Speed Talks:	Dr. Mikaela Nordborg
4.00pm	Soundscape variation between habitats on Lizard Island	Leo Chiu-Leung
4.05pm	Coral post-settlement mortality on the microhabitat scale	Matilde Drake
4.10pm	Uncovering Whale Shark Hotspots in Uncharted Waters and Predicting their Future	Ingo Miller
4.15pm	Macroalgal thresholds for device-based reef restoration of coral populations on inshore reefs of the Great Barrier Reef	Greta Zampa
4.20pm	Assessing Functional Diversity of inshore coral reefs following 7 years of restoration: Impacts on coral and macroalgal communities	Peter Lowley
4.25pm	Coral matchmaking: assisted gene flow to help corals beat the heat	Alex Macadam
4.30pm	Symbiotic secrets: Sequencing the genome of vertically transmitted coral symbionts	Sophie Renton
4.35pm	Detecting the Elusive: Monitoring Giant Tritons with environmental DNA	Merle Schlawinsky
4.40pm	Prediction of <i>Trichodesmium</i> Bloom in the Great Barrier Reefs from Hydrometeorological Parameters	Yuaning Zheng
4.45pm	Collection of people's choice nominations	
5.00pm	Alumni Function - drinks and canapes provided for all (7.30pm finish)	
5.30pm	Presentation of awards and prizes, closing remarks	

Greg Torda

Contact: admin.aims@jcu.edu.au

AIMS@JCU 20-Year Celebration

Day 2 - 26th September at AIMS

Time	Title	Presenter
8.30am	Arrive on bus	
8.45am	Welcome to Country, Smoking Ceremony, and Cultural Storytelling	Uncle Eddie Smallwood and Gudjuda rangers
10.00am	Opening talk and housekeeping, AIMS@JCU Research Director	Dr. Cherie Motti
10.15am	Morning tea	
	Session 1:	
10.45am	Invited student speaker	Redbird Ferguson
11.00am	Invited student speaker	Courtney Burns
11.15am	Meet the IP team	Libby Evans-Illidge
11.30am	Indigenous Futures	Jordan Ivey
11.45am	ATSIMS	Dr. Allison Paley & Tullia Grego
12 noon	Lunch	
	Session 2:	
1.00pm	How to do an FPIC	Carl Grant
1.15pm	Social value of Indigenous Partnerships projects	Libby Evans-Illidge and Meaghan Cummins
1.45pm	NAMMA - gold level project case study	Libby Evans-Illidge
2.15pm	IERC	IERC rep
2.30pm	"You Can't Ask That" panel – a culturally safe space and opportunity to ask all your questions about First Nations history, culture, and role in the future of marine science and stewardship leadership.	IP Team
3.00pm	Afternoon Tea	
	Session 3:	
3.30pm	Keynote speech & The Black Paper video	Manuwuri Forester
4.00pm	Presentation of gifts & summary of celebration	Dr. Cherie Motti
4.30pm	Leave on bus	

Research Director Report

As we move into the final quarter of the year, I'd like to reflect on a few key activities and new initiatives that have helped provide a supportive and collaborative environment.

Keep the 'Writing' Momentum Going. The Pomodoro technique (25 minutes writing / 5-minute break) is a tried and tested way to dedicate distraction-free time to your writing. The AIMS@JCU postdoctoral fellows run sessions every alternate-week from 10-12 midday, hosted at AIMS and JCU. These sessions are a fantastic way to connect with peers and get some critical feedback. If you'd like to receive calendar invites (venue, Zoom link for remote access), please email admin.aims@jcu.edu.au.

In May, 10 students braved the waves to travel to Magnetic Island for the annual AIMS@JCU Writing Retreat. The retreat provided a quiet and productive space to focus on research writing outputs. Participants benefited from expert guidance provided by our AIMS@JCU Postdoctoral Fellows and the ever-inspiring Prof. Liz Tynan, whose insights helped sharpen writing skills and boost confidence. Our annual R-Course with the fabulous Murray Logan from AIMS was held in July at JCU, helping 19 AIMS@JCU staff and student members to improve their statistics skills.

Congratulations to Nyoka Hrabinsky, the first-ever recipient of the inaugural AIMS@JCU Indigenous Undergraduate Scholarship! This award celebrates Nyoka's outstanding dedication and potential, and marks an important step in our commitment to fostering Indigenous excellence in marine science. We're proud to support her journey and look forward to the contributions she'll make as her path unfolds.

Continued on next page.

Greg Torda

Research Director Report

Congratulations to Drs. Pheobe Arbon (JCU), Kelly Condon (JCU) and Yui Sato (AIMS), joint recipients of the inaugural AIMS@JCU Early Career Researcher Collaboration Award. This award was established to strengthen ties between AIMS and JCU and to give early career researchers a meaningful boost in launching impactful, cross-institutional initiatives. Their project, "Exploring eDNA as a tool for pathogen detection and monitoring in coral aquaculture," exemplifies the spirit of innovation and partnership we're aiming to foster. We're excited to see where this partnership leads.

Our revitalised Morning Tea Seminar Series saw an inspiring talk from AIMS@JCU Postdoctoral Fellow Dr. Tomas Leon Cortes (July) on hydrodynamics, sedimentology and numerical modelling of natural disasters. It was wonderful to see so many staff and students attending - these informal gatherings continue to be a great way to connect across disciplines! Our next morning tea will be held in November at AIMS, featuring Dr. Gemma Galbraith! We're now seeking speakers for 2026. Whether you are interested in presenting your latest scientific discovery, running a masterclass on writing rebuttals, or sharing tips for crafting a winning grant application - we've got a microphone for you!

End-of-Year Gathering. Join us as we wrap up 2025 with a relaxed and festive evening at Rambutan on Flinders Street. Friday 28th November from 6:30pm onwards. Kick back in a lounge chair, take a dip in the pool, and reconnect with fellow students and staff members as we celebrate another fantastic year. Enjoy delicious wood-fired pizza, refreshing drinks, and great company in a laid-back setting that's perfect for unwinding. We'd love to see you there—bring your good vibes and help us send off the year in style!

Cherie Motti, AIMS@JCU Research Director

Contact: c.motti@aims.gov.au



Graduation of Dr. Rachel Neil and Dr. Eric Fisher, with former AIMS@JCU SAC member Assoc. Prof. Alana Grech & AIMS@JCU Research Director Dr. Cherie Motti



AIMS@JCU Writing Retreat with AIMS@JCU Post-doctoral Fellow, Dr. Tomas Leon Cortes



AIMS@JCU Writing Retreat with AIMS@JCU Post-doctoral Fellow, Dr. Magena Marzonie



AIMS@JCU Writing Retreat, yoga with the multi-talented Dr. Daniela Ceccarelli

James Tan CH