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Gergely Torda
Marine and Tropical Sciences Research Facility
Conference
April 28-30, Townsville

The Australian Government's \$40 million Marine and Tropical Sciences Research Facility (MTRSF) is a consortium of researchers and end users that collaborate to increase the sustainability of management and use of north Queensland's key environmental assets, particularly the Great Barrier Reef (GBR) and its catchments, tropical rainforests including the Wet Tropics World Heritage Area (WTWHA), and the Torres Strait.

The Reef and Rainforest Research Centre coordinates annual Research Synthesis Conferences to showcase results of MTRSF research and facilitate engagement between researchers, and between researchers and end users. On the 3rd such annual conference, held in Townsville on 28-30 April, more than 70 scientists presented the results of their research, from as broad a spectrum of areas as coral reef connectivity, re-vegetation of rainforests, economic impact of climate change on tourism, or the effects of flood plumes in water catchments.

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Commonwealth Environment Research Facilities
Marine and Tropical Sciences Research Facility

About the AIMS@JCU Newsletter:

This newsletter is produced quarterly and distributed by e mail to all 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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Joe Baker of the Australian Marine Sciences Association (AMSA)

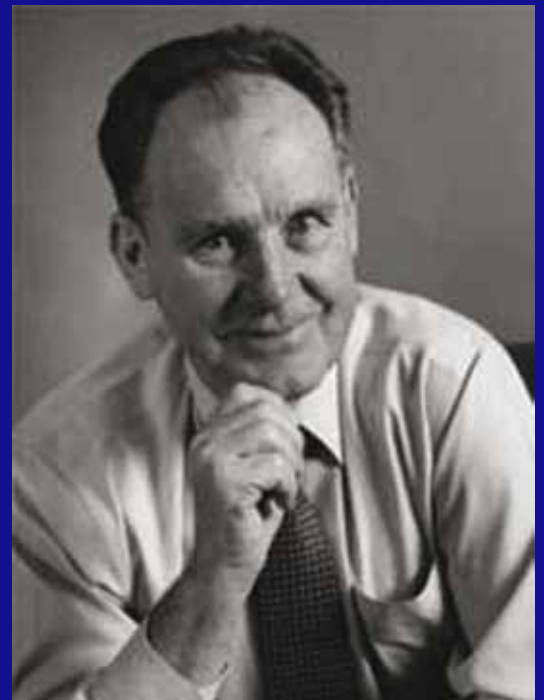
AMSA Memberships Donated for AIMS@JCU Student Members

Professor Joe Baker AO, OBE, FTSE, FRACI, C.Chem., is a Patron of the Australian Marine Sciences Association (AMSA) and has personally funded nine AIMS@JCU students for one year's membership to AMSA. This extremely generous offer will be available again next year along with two other assistance grants, each of \$150, to assist students attending the subsequent AMSA meeting. The following students were the lucky recipients of this year's free membership: Alexander Vail; Gergely (Greg) Torda; Charlotte Johansson; Marie Magnusson; Jasmine Jaffres; Thomas Bridge; Chun Hong (James) Tan; Raechel Littman and Patricia Warner.

AMSA is Australia's major professional association for marine scientists from all disciplines. The primary goal of AMSA is to advance marine science and its understanding in Australia. AMSA works to promote liaison and foster cooperation between the diverse organisations/institutions and workers across Australia in the many disciplines of marine science, through: regular publication of a Bulletin; holding an annual conference and other specialist meetings; and its website and associated discussion list. As well as operating nationally, AMSA has active Branches in most States and Territories.

Membership is open to scientists, science students and corporate bodies engaged in marine research, policy and management. AMSA also strongly encourages and supports the membership of postgraduate students and offers sought-after awards for its student members.

AMSA members benefit in many ways, not least of which is through networking and contribution to documents supporting marine science in response to government calls for submissions. Members receive the Australian Marine Science Bulletin and are entitled to reduced registration for the AMSA Annual Conference. Members have access via login to the members-only sections of AMSA's Website and to AMSA's mailing list, which any member may use to disseminate information, including announcements of career opportunities, and to stimulate discussion on marine science matters.



AMSA's primary event is its annual conference, held usually in July each year. It is hosted by different AMSA branches around Australia. We are thankful to Joe for offering AIMS@JCU students the opportunity to take advantage of this society.

For more information, please visit: <https://www.amsa.asn.au/>

Richard Brinkman

New AIMS Program Leader for Coastal Processes & Modelling

Dr. Richard Brinkman is a physical oceanographer and Senior Research Scientist at the Australian Institute of Marine Science. Richard began his career at AIMS in 1995 and in parallel completed his PhD through James Cook University, where he investigated wave propagation through mangrove forests. His research interests fall within the broad topics of coastal oceanography and physical-biological interactions on continental shelves.

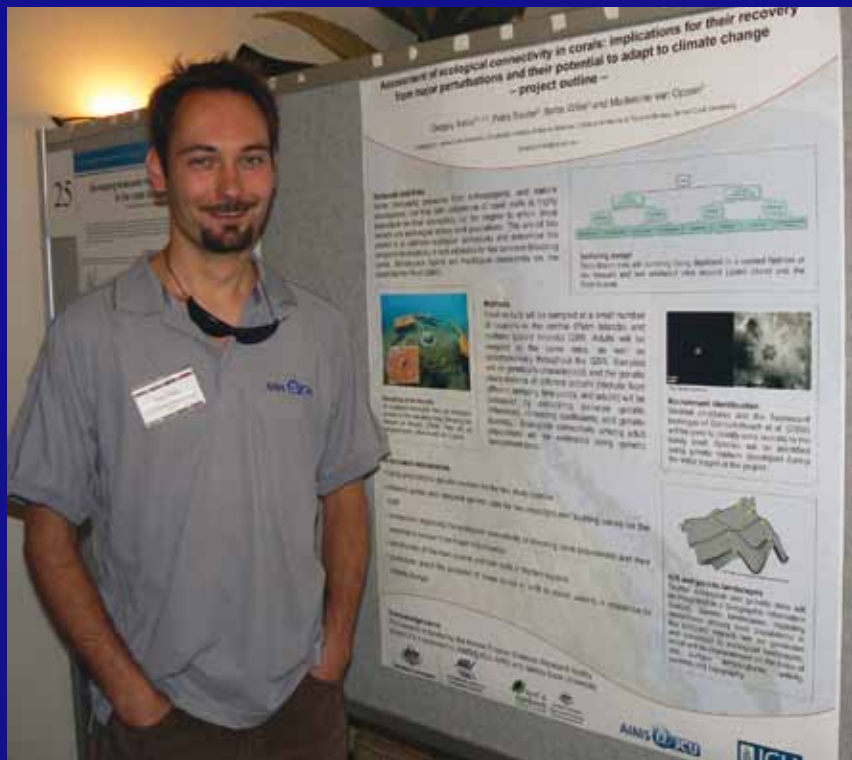
Richard currently undertakes research on shelf dynamics, coupling of shelf and ocean circulation, sediment dynamics on tropical coasts, wave propagation over coral reefs and physical-biological interactions at regional and local scales, using a mix of field observations and numerical modelling. His research projects span Western Australia, the Northern Territory and Queensland, in line with AIMS' broad geographical focus across tropical Northern Australia. In his work in Western Australia, Richard leads a Western Australian Marine Science Institution (WAMSI) project downscaling future ocean climate scenarios to scales relevant to the coral reef ecosystems at Ningaloo Reef. On the Great Barrier Reef, Richard is leading a project team in the development of a numerical 3-dimensional hydrodynamic model of the entire GBR with the goal of producing a generic tool that will provide a capability to support the prediction and analysis of transport of material throughout the GBR and underpin the future development of sediment dynamics and biogeochemical models at regional scales.



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Gergely Torda - MTSRF Conference Summary

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The meeting therefore gave me a great opportunity to familiarise myself with all areas of research done in this particular geographic area, where my research on population connectivity of corals is also focused. It was also good to see how representatives of end users were interested and excited about the outcomes of some research, for example a study forecasting the risk of exposure to venomous jellyfish, which demonstrated some disturbing figures of temporal and spatial range expansions as waters are expected to warm.

We could also see astonishing figures about eco-tourism on the GBR, such as the live-aboard dive boats in themselves that are directly responsible for generating at least \$16 million worth of income to the Cairns – Port Douglas region, or about the complexity of climate change impacts on various marine taxa. Climate change will, for example, cause additional pressure on already threatened sea turtle populations by skewing their sex ratio towards female, reducing available nesting space through sea-level rise and their extended exposure to cyclones.

After the many interesting talks and posters I found it particularly astonishing how all these various research results are finally integrated to contribute to understanding and better managing ecosystems of the North Queensland region, through portals such as the currently developing Reef Atlas.

For more information, visit www.rrrc.org.au/news/2009_conference.html

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AIMS@JCU Recent Notable Student Publications

Neal Cantin, a completed Stress in Tropical Marine Systems PhD AIMS@JCU scholarship student has co-authored:

Jones, A.M., Cantin, N.E., Berkelmans, R., Sinclair, B. & Negri, A.P. (2008) A 3D modeling method to calculate the surface areas of coral branches. *Coral Reefs* **27**:521-526

Emily Howells, a current Stress In Tropical Marine Systems AIMS@JCU scholarship student is first author for the following:

Howells, E.J., van Oppen, M.J.H. & Willis, B.L. (2009) High genetic differentiation and cross-shelf patterns of genetic diversity among Great Barrier Reef populations of *Symbiodinium*. *Coral Reefs* **28**: 215-225

Stephen Whalan, a completed Tropical Aquaculture PhD student and Piers Ettinger-Epstein, a current AIMS@JCU Tropical Aquaculture student member have co-authored:

Whalan, S., Ettinger-Epstein, P., Battershill, C. & de Nys, R. (2008) Larval vertical migration and hierarchical selectivity of settlement in a brooding marine sponge. *Marine Ecology Progress Series* **368**: 145-154

Ana Cano-Gomez, a current AIMS@JCU scholarship student in the Tropical Aquaculture program is first author of the following paper:

Cano-Gomez, A., Bourne, D.G., Hall, M.R., Owens, L. & Høj, L. (2009) Molecular identification, typing and tracking of *Vibrio harveyi* in aquaculture systems: Current methods and future prospects. *Aquaculture* **287**: 1-10

Carol Erwin, a current Coastal Processes and Modelling AIMS@JCU scholarship student co-authored the following:

Heinz, G.H., Hoffman, D.J., Klimstra, J.D., Stebbins, K.R., Kondrad, S.L. & Erwin, C.A. (2009) Species Differences in the Sensitivity of Avian Embryos to Methylmercury. *Archives of Environmental Contamination and Toxicology* **56**: 129-138

Where are they now?

Previous AIMS@JCU PhD student: Dr. May-Helen Holme

May-Helen Holme started at James Cook University in 2001, doing a Bachelor of Marine Biology and Aquaculture. Seven years later she graduated from the same university with a PhD in Aquaculture, after completing a thesis on the diet development and nutritional requirements of mud crab larvae. Her research was conducted under the supervision of Professor Paul Southgate and Dr. Chaoshu Zeng from the department of Marine and Tropical Biology, as well as Dr. Mike Hall from AIMS. Her PhD work was funded by the AIMS@JCU scholarship scheme.

After graduation, Dr. Holme moved to Norway where she works as a research scientist in the private research company Ewos Innovation. This is the R&D Company of Ewos, which is the largest producer of salmon feed in the world. The company is located in Norway, Chile, Scotland and Canada, so the position naturally includes a lot of domestic and international travelling and has opened doors for an international career. Although her background is in lipid nutrition, Dr. Holme is now working as a project manager, where she is involved in both diet formulation, raw material assessment, development of functional feeds and lab based assessment methodology. The company has also given her the opportunity for personal career development, and May-Helen is attending ongoing courses in both project management, feed formulation and modelling statistics.



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Research Director's Report

AIMS@JCU continues to make progress as 2009 speeds past us. We have made several changes in the way we try to deliver information to our members by re-styling the newsletter and implementing the e-research news updates. Hopefully these are useful and interesting for all of you and help keep you up to date with AIMS@JCU happenings. As most of you know we have had some changes over the last few months with Michael Ridd and Craig Steinberg both stepping down as Coastal Processes and Modelling Program Leaders. They have been ably replaced by Scott Smithers (JCU) and Richard Brinkman (AIMS). We welcome both of them to the AIMS@JCU community and look forward to working with them to benefit all of our members.

As we approach the end of the year we are starting preparation for the annual student seminar day. As usual, prizes for best oral presentations and best poster will be awarded. We encourage all of the students to participate and take advantage of the funds on offer.

Finally, the AIMS@JCU biannual report is nearing completion with copies circulating for review prior to sending it out for printing. We will make copies available to everyone as soon as they are off the press. Thanks again to all who have contributed to that document.

Thanks to all of our members for your continued efforts and support and best of luck with your research.

Michelle

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Photographs in this publication were submitted by AIMS@JCU students/staff or have been sourced from the AIMS Long Term Monitoring Team.



