

CMT

Weekly News Update
05 April, 2019



CENTRE FOR MOLECULAR
THERAPUETICS

CMT WEBSITE <https://www.jcu.edu.au/cmt>

FACEBOOK https://www.facebook.com/pg/Centre-For-Molecular-Therapeutics-1511726859066532/posts/?ref=page_internal

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“Harnessing the power of the tropics to develop innovative solutions to global public health”

Our Story

The Centre for Molecular Therapeutics is based at James Cook University, adjacent to the World Heritage-listed Daintree Rainforest and the iconic Great Barrier Reef. North Queensland also harbours many parasites and other microorganisms that are restricted to tropical environments. This enormous biodiversity provides a unique opportunity to explore and test new medicines derived from these natural resources as novel therapeutics for a range of infectious diseases and non-infectious human illnesses, including chronic disorders, allergies and autoimmune diseases as well as envenomations.

The world’s tropical regions also have special significance as home to a number of major global health pathogens as well as important

emerging or re-emerging infectious disease threats.

Immunotherapeutics, vaccines and diagnostics to manage these diseases are urgently needed. The Centre for Molecular Therapeutics provide a unique framework for researchers with diverse expertise to collaborate on innovative cross-disciplinary research to develop novel therapeutics, vaccines and diagnostics from the tropics and for the tropics. Research is carried out under four key programs of Biodiscovery, Molecular Characterisation and Design, Molecular Immunology and Clinical Translation.

Under the Microscope – Daniel Browne



Tell me about your area of research?

For the last three years I have been working as an immunology based Research Assistant, first at QIMR and now here at JCU's AITHM. At QIMR I was involved with Leukemia research investigating methods to reduce the severity of Graft versus Host Disease. Additionally, I worked on a septicemia project developing platforms for rapid diagnostics of blood stream infections. At AITHM I am optimising diagnostics for measuring immune responses to malaria peptide epitopes. I will be starting my PhD in July, where I will continue my work in malaria and hopefully contribute to the development of novel vaccines.

What interests you about working in this area?

The immune system is simply fascinating. Protecting us every day from a constant barrage of assaults from bacteria, viruses, parasites and even cancer. Malaria itself is also an amazingly terrifying phenomenon. How can it be that these tiny single celled parasitic protists can cause so much destruction? However, what interests me the most is that I believe the work we do can and does make a difference. That diseases such as Malaria must be eradicated and that I can be a part of this global effort.

Tell me about the highlights of your professional career so far?

I was very proud of my contributions as a Research Assistant to the testing of Flt-3L as an alternative to post bone marrow transplant cyclophosphamide at QIMR. My previous supervisor Dr Kate Markey utilised mouse models to demonstrate recipient pre-transplant treatment with Flt-3L induced deletion of alloreactive T cells to reduce the severity of Graft vs Host Disease. Basically, this is a novel strategy to help Leukemia patients undergoing bone marrow transplants. The data we collected demonstrated

significantly increased survival with a reduction in the negative effects of chemotherapy drugs. This work is now in the United States, where Dr Markey is working to bring the use of Flt-3L to phase I clinical trials. The thought that all those long hours and late nights may start to help people soon is incredibly rewarding.

How do you see your research developing in the future?

Our laboratory is part of a worldwide effort to develop a novel malarial vaccine. Potentially, my work may identify novel antigen targets which illicit a strong immune response. This may help to protect the 220 million people who are infected with malaria annually and reduce the disease burden upon some of the world's poorest and most vulnerable citizens.

What are the 5 most important techniques you use in your research?

I use an assortment of traditional molecular biology and immunology techniques. Most important would be nucleic acid isolation, gene expression RTqPCR testing, cellular analysis techniques such as flow cytometry, cytokine production detection techniques such as enzyme-linked immune absorbent spot (ELISpot); all done with careful sterile technique as we have samples from all over the world.

What advice do you have for science students who are considering medical research as a career?

Find an excellent supervisor. Throughout my undergrad, honours and RA roles, I have been very lucky to have had excellent supervisors. Learn as much from them as you possibly can.

What do you see as the benefits of being part of the Centre for Molecular Therapeutics (CMT)?

Here at AITHM we have a fantastic new facility to work within. We have a wide assortment of cutting-edge equipment and multiple research groups with diverse backgrounds and experience to learn from.

Tell me 5 things that make you happy?

Family/friends, finishing a successful project, cold beer, Sunday mornings, being outdoors in nature.

What would you like to do in the future?

Most importantly, I hope to finish my PhD! Once finished, I hope that I will be able to continue my work in immunology. I would love the chance to teach.

Tell me 5 things you dislike?

Crowds, poorly controlled experiments, bureaucracy, how fast time can go, sausage rolls

Welcome to JCU Connect

Research Services is now officially known as JCU Connect. This is more than just a name change for the directorate, this is a new way forward for research and innovation at JCU.

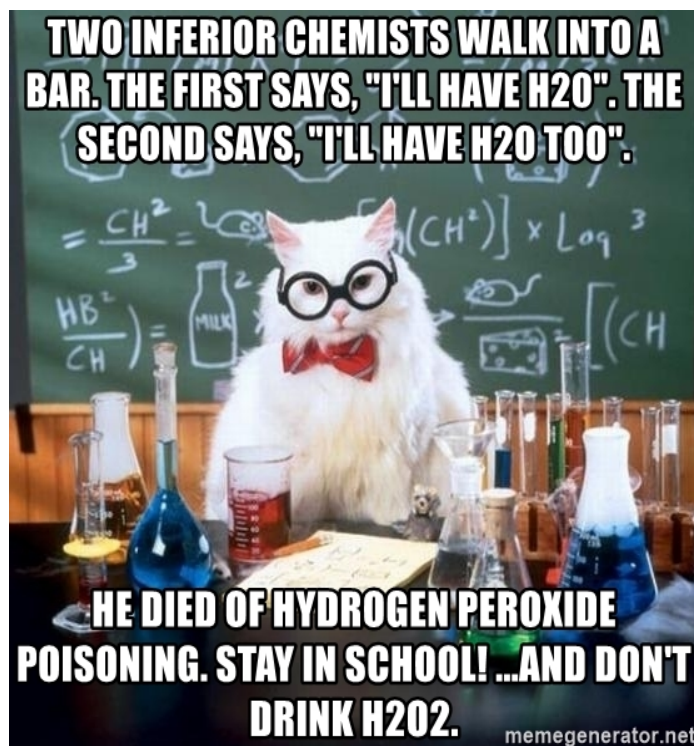
JCU Connect will be a single point of contact for researchers and potential partners seeking assistance with research, projects and bringing great ideas and great inventions to market. The change is also designed to improve our professional service and support you - our most important stakeholders.

The JCU Connect team will be distributing regular communication, like this one, to the University community to celebrate JCU partnerships and research successes as well as send invitations to participate in workshops, events and other opportunities.

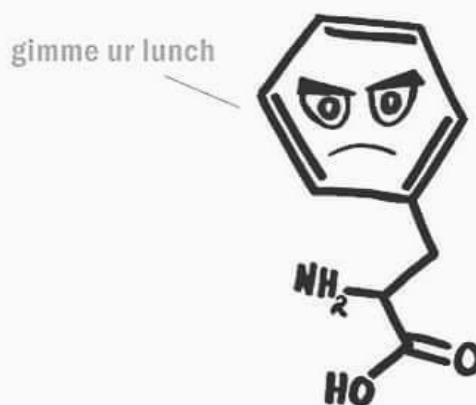
Driving innovation by connecting Universities and companies

JCU have a membership with In-Part and invites the research community to register. In-part connects you to an international community of over 13,500 R&D decision-makers, providing valuable collaborative partnerships for your research. In-Part also provide a weekly summary of Industry opportunities. In-Part focuses on the fields of Engineering, Bioscience, Chemistry, Therapeutics and Technology. [Register here](#)

Jokes of the Week



WHAT DO YOU CALL AN ACID WITH AN ATTITUDE?



A-mean-oh acid.



Tuesday 9th - Friday 12th April	8am - 5pm
Tuesday 16th - Friday 19th April	8am - 5pm
Tuesday 23rd - Friday 26th April	8am - 5pm
Tuesday 30th April- Friday 3rd May	8am - 5pm

- Contact Smart Clinics Smithfield and make an appointment
- Advise that you are a JCU employee for Flu Vaccination
- Take your University Staff ID card and Medicare Card to the appointment
- If you have not attended the Smart Clinic Smithfield previously both forms will need to be completed. New patients – please complete the New Patient Information Form and forward to Smithfield.manager@smartclinics.com.au **PRIOR** to your appointment. If you have previously attended complete the pre-vaccination Screening Checklist **ONLY**.
- Address: Campus Village Shopping Centre, Smithfield.
- Appointments outside of the above times will be at your own expense.
- Any questions email: rehab@jcu.edu.au

MAC COMPUTER UPDATE

JCU has retired the Parallels Application Portal (which allows staff to install JCU software on their work Apple computers)

And is moving to JAMF Pro for self-service software installations. To ensure that JAMF is working on your JCU Mac computer [please follow the steps outlined in the JAMF pro article on the ICT Communication Hub](#)

What is JamF Pro???

JamF Pro is a management system for Apple macOS computers. With JamF Pro, JCU ICT can manage the entire lifecycle of Apple devices. This includes deploying and maintaining software, responding to security threats, and distributing settings.

Please follow the instructions on the [ICT Communications Hub](#) to ensure you continue to have access to the latest software available to JCU staff.