Get to know your fellow BMDT colleagues

Under the Microscope

No.1

PAUL GIACOMIN
NHMRC Research Fellow

WORKING IN ALEX LOUKAS' LAB IN CAIRNS, PAUL'S CURRENT RESEARCH EXAMINES THE THERAPEUTIC POTENTIAL OF HOOKWORMS FOR THE HUMAN IMMUNE SYSTEM.

Tell me about your area of research.

I'm trained as an immunologist- more specifi cally a cellular or mucosal immunologist - who has always had a fascination with the complex relationships between parasitic worms and the host immune system.

While most of my research thus far has been concerned with trying to understand how the immune system operates to limit infections and immunopathology associated with worm infections, my more recent research has focussed on how manipulation of the immune system by worms may be beneficial under some circumstances.

What interests you about working in this area?

Mucosal immunology, and immunology in general is an exciting area to work in, but also humbling in that the more we learn, the more we realise we don't know. The intestinal immune system is amazingly complex and constantly faces challenges from resident commensal bacteria, viruses, the food we eat, our own tissues and environmental antigens, but yet somehow can avoid overreacting to these harmless stimuli- but still manage to mount appropriate defenses against potentially dangerous pathogens.

How this all works, and why it becomes dysregulated in inflammatory and autoimmune diseases, is fascinating and understanding more will lead to better health outcomes for people who suffer from inflammatory or infectious diseases.

How do you see your research developing in the future?

I would like to maintain a similar balance to what I currently have, i.e retain my basic mucosal immunology research but develop my more translational, commercial and clinical research capacity. Further down the line, I'd also like to take up some more teaching responsibilities.

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

Mouse models of infection and inflammatory disease. Flow cytometry. ELISA. In vitro assays. Microscopy.

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

I would certainly encourage students to consider medical research to the level of doing a PhD. I think in doing their PhD, they will get an idea of whether research is for them.

But even if it is not, the writing, critical analysis, communication and problem solving skills they acquire will be translatable to a number of careers, even outside of science.

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What do you see as the benefits of being part of the Centre for Biodiscovery & Molecular Development of Therapeutics (BMDT)?

The annual retreat is a great way to be updated on all of the current research by the Centre researchers- it's one of the few times Cairns and Townsville-based researchers can meet face to face. And it's always a lot of fun. The Centre also gives great exposure to its researchers through the website and other social media.

Tell me about the highlight of your professional career so far.

I have been fortunate to receive three postdoctoral research fellowships that have given me the freedom and opportunities to conduct my research in some of the top labs in the world. Getting NHMRC Project Grant funding in such a competitive environment last year was both a surprise and a relief.

What would you like to do in the future?

I would eventually like to establish my own research group at JCU Cairns- there is a lot of positive momentum and opportunities for medical research in North QLD at the moment, which make for a great environment.

Tell me 5 things you dislike.

Reality TV. Port Adelaide Power football club. Long flights. Traffic. Fraedom.

Tell me 5 things that make you happy.

Family. Sport. Music. Cake. Beer.

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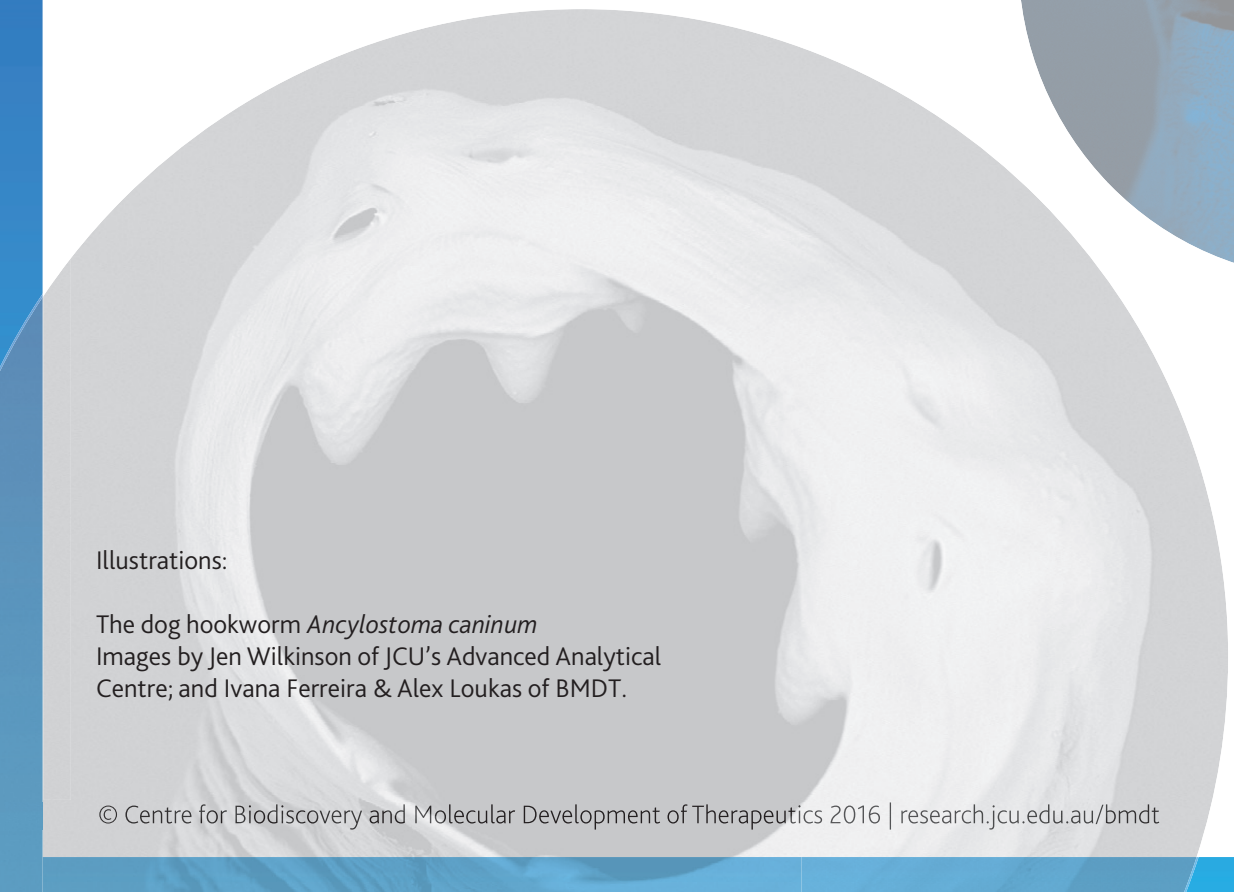

Illustrations:

The dog hookworm *Ancylostoma caninum*
Images by Jen Wilkinson of JCU's Advanced Analytical Centre; and Ivana Ferreira & Alex Loukas of BMDT.

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