

# Centre for Biodiscovery

## Newsletter

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Keep up to date with what's going on at the Centre for Biodiscovery.

March 2018

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Wayne Patrick's space to announce, introduce and comment.

#### - The Research Leadership Group (RLG)

Introducing the members of the RLG

#### - Impact through commercialisation

A regular column written by Jeremy Jones. In this issue, Jeremy introduces himself and his role at VicLink.

#### - #whatyougot?

A regular column written by Effie Fan featuring interesting equipment that is available to staff and students of the Centre for Biodiscovery.

#### - Student-led Symposium - December 2018

A throwback to the successful Symposium in December 2018.

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Our details. Please reach out for feedback, comments, questions.



## From the Director's Chair

Kia ora and welcome to the first issue of the Centre for Biodiscovery's new-look newsletter!

As many of you will know, I took over as Director at the start of the year. My first order of business is to say an enormous THANK YOU to the previous Director, A/Prof Paul Teesdale-Spittle, and his Deputy, Dr Joanne Harvey. Under their leadership the Centre reached new heights in terms of research successes, student support and engagement with the broader Biodiscovery community. I'm lucky to be taking the reins right now – especially as Paul even managed to leave some unspent money in the Centre's account...

Fortunately, I managed to convince the other two members of Paul's Executive – Dr Phillip Rendle and Prof Ian Hermans – to stay on in the Centre's new Research Leadership Group (RLG). The full RLG is introduced elsewhere in this newsletter. Collectively, the members represent the Centre's range of disciplines and career stages. It is great to have a diverse set of viewpoints around the table as we chart the Centre's course for 2019 (and beyond). Feel free to contact any of us with your ideas, thoughts, suggestions or rants.

One big thing in our future is the annual mid-year Symposium. This is going to be a 4-day research extravaganza, thanks to our partnerships with the NZ branch of the Australasian Society for Immunology and the NZ Society for Biochemistry and Molecular Biology. Check out <http://www.immunology.org.au/2019nz/> and <https://www.nzsbmb.org/conference> for all the details about registration and abstract submission, and keep 1st-4th July free!

Finally, I'd like to acknowledge the huge effort that Sonja Hummel puts in to keep the Centre on its feet. In between finishing her MBmedSc thesis, she has been updating the Centre's website and contact list, organising seminars and reminding me of all the things I am supposed to be doing. She is also the brains behind this newsletter. I definitely owe you that coconut cappuccino, Sonja!

Ngā mihi,

Wayne Patrick, Director

[wayne.patrick@vuw.ac.nz](mailto:wayne.patrick@vuw.ac.nz)

# The Research Leadership Group

The Centre for Biodiscovery is now led not only by the Director, Wayne Patrick, but by a group of early-career and established researchers and scientists who have a passion for biodiscovery. Here we're introducing the RLG members to you, who they are, what they're doing and why biodiscovery is in their nature.



Tēnā koe! Ko Tititea te māunga; ko Mata-Au te awa. Ko *Philip Laing* te waka – the second ship of Scottish immigrants to arrive in Dunedin, in April 1848. Ko James Patrick tōku tīpuna. It was my grandfather's great-grandfather (and his family) who was on board. Ko Mike Patrick rāua ko Heather Pryor ōku mātua. Ko Wayne Patrick tōku ingoa.

In addition to my role as the Centre's Director, I am also an Associate Professor of Biochemistry in the School of Biological Sciences. In my research group we use tools from enzymology, structural biology, directed evolution and microbiology to address fundamental questions in biochemical evolution. We also use our evolutionary insights to engineer enzymes with new and improved properties. If you're interested in learning more, check out <https://molecules-and-microbes.org/>



**Effie Fan**

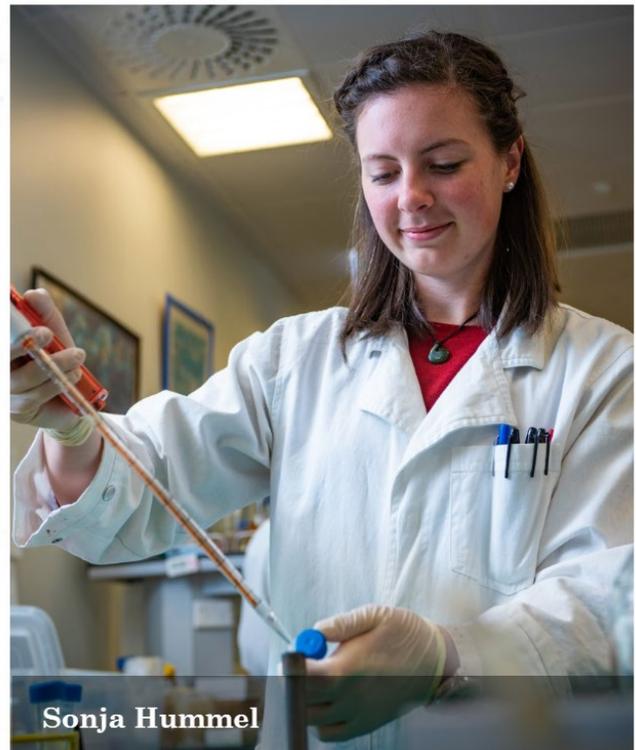
Effie completed her PhD in Biochemistry at the University of Canterbury in 2017 before joining the Ferrier Research Institute as a Postdoctoral Research Fellow working alongside Professor Emily Parker. Her research focuses on investigating the function and regulation of important metabolic enzymes from pathogenic bacteria with the aim of developing new antibiotics for diseases. She's also leading international collaborations with research groups in UK and Canada to investigate the applications of advanced structural biology and protein engineering techniques.



**Phillip Rendle**

Phillip Rendle is the Deputy Director of the Ferrier Research Institute. His research involves the synthesis of multivalent molecules for treatments of various diseases. He also looks after Ferrier's delivery of research outputs under contract to various international commercial clients.

Sonja recently submitted her Master's Thesis in Cell Biology under the supervision of Melanie McConnell. Her research focused on mitochondrial transfer in *Saccharomyces cerevisiae*, investigating if yeast could be used as a model for this phenomenon. She has been working part time during her Master's and is now working full time as an SBS administration assistant. In her role, she is supporting the Centre through the administrative organisation of seminars and symposia, updates the CfB website and works closely with the RLG members.

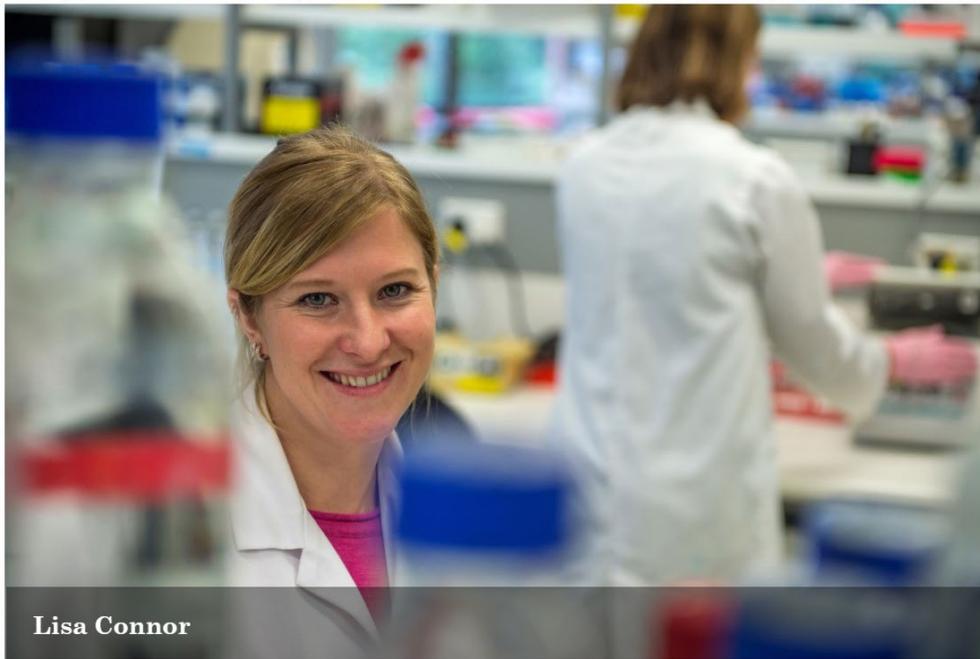


Sonja Hummel

Alvey Little is a PhD student with Joanna MacKichan, studying the human pathogen *Bartonella quintana* and its modulation of host immunity. He grew up in Wellington and first came to Victoria in 2013 to pursue his bachelor's degree in Biomedical Science. In 2016 he completed a Bachelor of Science with honours in Molecular Microbiology and started his PhD in October of 2017. He claims to have a life outside of the university, though there are plenty of reasons to doubt this claim.



Alvey Little



Lisa Connor

Lisa is a Lecturer in the School of Biological Sciences (SBS) and a HRC Sir Charles Hercus Research Fellow. Her research team explores how the immune system is primed by microbes and novel vaccine formulations.

They are particularly interested in a subset of cells known as dendritic cells, which are the sentinels of the immune system. Dendritic cells are uniquely placed at the interface between the host environment and the immune system. Our works explores how dendritic cells communicate information received from the surrounding environment to instruct the different types of immune cells to form the most appropriate defence.

Her team works closely with research groups at Malaghan Institute of Medical Research and Ferrier Research Institute to develop effective vaccines that produce protective antibody responses. Recently, Lisa joined forces with protein structural biologist, Dr Davide Comoletti in SBS, to identify novel protein-protein interactions between immune cells that could be used as a target in vaccine development or novel immunotherapies.



**Ian Hermans**

Professor Ian Hermans is Deputy Director of the Malaghan Institute of Medical Research in Wellington, New Zealand. He leads the cancer immunology programme at the institute, and has a long-standing interest in developing immune-based therapies, particularly therapeutic vaccines. Prof Hermans completed a PhD in biochemistry at Victoria University of Wellington. After initial post-doctoral work at the Malaghan Institute, where he developed his strong interest in immunology, he spent four years at the University of Oxford working on immune mechanisms that can be exploited in vaccine design. He then returned to the Malaghan Institute after receiving a Sir Charles Hercus Fellowship from the Health Research Council of New Zealand. In collaboration with Prof Gavin Painter, a synthetic chemist at the Ferrier Research institute, he has developed vaccines that encourage cellular interactions that enhance immune responses. In addition to this preclinical work, Prof Hermans has developed a strong translational focus to his research, including establishing a manufacturing facility to prepare vaccines for clinical trials in patients, and being involved in founding a New Zealand-based company to commercialise therapeutic vaccines.



As a natural products chemist, Rob Keyzers and his group use the biosynthetic potential of Mother Nature to find new molecules that may have potential as biochemical probes and new drug leads. A large amount of Rob and his group's work focuses on marine sources for their chemistry, with specimens collected around the Pacific including the Kingdom of Tonga, around the NZ mainland and as far away as the sub-Antarctic.



## Impact Through Commercialisation

Welcome to the first installment of '*Impact through commercialisation*', a new regular column for the CBD newsletter. I would like to use this column to introduce myself and the Viclink team, <http://www.viclink.co.nz/>, for those who have not had projects with us before. I will be using this column to share exciting stories of commercialisation projects coming out of CBD and the ways in which we can help you in your research or entrepreneurial endeavours.

Viclink is the commercialisation office for Victoria University of Wellington, our team has a strong background and experience commercialising a wide range of biotechnologies. Many of you have already met us but your key members of the team are Janice Cheng (Ferrier Institute), Matt Nicholson (Synthetic Biology) and Myself (Jeremy Jones). I am taking over for Ryan Graves who has now moved to working full-time on an exciting spin-out opportunity.

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"commercialisation is not just about financial returns"

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So a little bit about me; I have a real passion for this space that drives what I do. I really love working with researchers and learning about all the exciting projects in the CBD. I virtually run on coffee so will always jump at the chance to throw ideas around with you over a coffee (or beer) so please don't be shy. I am a Carbohydrate Chemist by training having done my Masters under Dave Larsen at the University of Otago. I started my science career in the Process Development team, at that time part of Richard Furneaux's group. This team became GlycoSyn as we know it now and I was lucky enough to be part of those early days which felt a lot like a start-up – *us against the world*. The 8 years I spent at GlycoSyn is where I think my love of the business translation side of science really took hold. I eventually left the lab and took up a position as Commercialisation Manager at KiwiNet, a government funded support organisation tasked with accelerating commercialisation of New Zealand science. Viclink has a close relationship with KiwiNet and partners with them on a number of initiatives from researcher training through to investment. In 2015, I started my first short stint with Viclink where I met Dr Shalen Kumar who told me all about his exciting work with DNA aptamers for diagnostics. Needless to say, I was quite taken with the potential of this technology and within 6 months Shalen and I had founded a new start-up company called AuramerBio! (more on that story in later installments). Leaving the reigns of AuramerBio in Shalen's capable hands I have returned back to Viclink this year.

That's enough about me! I just want to leave you with one message close to my heart and that is that; commercialisation is not just about financial returns, the real return on investment that drives me is being able to see your research out in society having an impact and reaching far beyond your scientific peers.

Please send me any questions you may have about your research and the commercialisation process, I can use this column as a medium to answer and share insights to the wider group. Otherwise if you just want a chat don't please hesitate to contact me, I'll even buy the coffee!

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Jeremy Jones (021 834 284,  
[Jeremy.jones@viclink.co.nz](mailto:Jeremy.jones@viclink.co.nz) )

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# #whatyougot?

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## Call for equipment database

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At Centre for Biodiscovery, we commit to facilitating research communications and efficient use of resources. If you have an equipment or technique that others may be interested in, please contact Sonja Hummel ([Sonja.Hummel@vuw.ac.nz](mailto:Sonja.Hummel@vuw.ac.nz)) for it to be featured in our newsletter and contribute to the CfB equipment database.

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## Equipment showcase

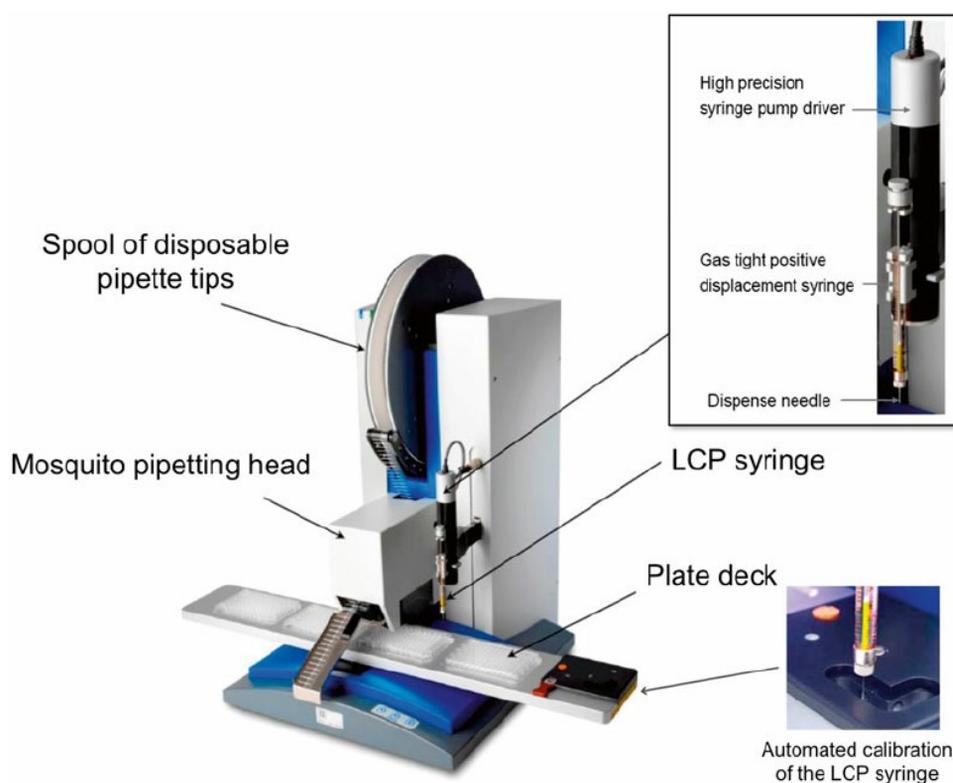
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The **TTP Labtech highly automated Mosquito liquid handling system** allows for fast high-throughput screening of crystallisation conditions for biomolecules, which significantly reduces processing time, at the same time still maintains highly precise dispensing. This instrument may be used with a wide variety of sample types and chemistry to accommodate various applications.

For more information, please refer to <https://www.axt.com.au/next-generation-protein-based-therapeutics/> or contact Effie Fan or Gerd Mittelstädt.



Some of the team at the Ferrier Research Institute and their new mosquito automated liquid handling system from TTP Labtech. Mohammad Firoozinia, Effie Fan, Rosannah Cameron, Wanting Jiao (left to right).



Components of the crystallization Mosquito LCP robot. Image taken from [this link](#).

# Conference and Travel Grants

Each year, the Centre for Biodiscovery supports students financially with a Conference/Travel grant. We are now accepting applications for the first funding round of 2019. The application form has been updated, so please ensure you're reading it in full.

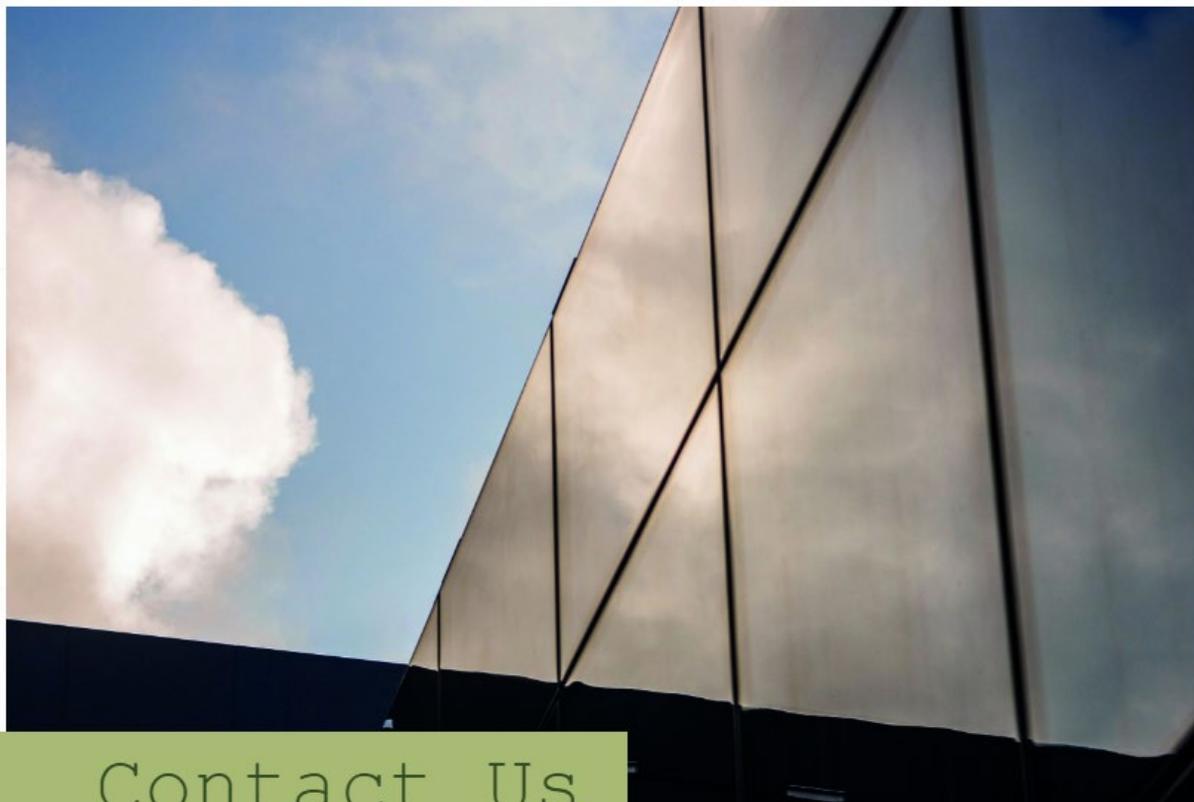
## Student-led Symposium - December 2018

The student-led one day Symposium in December 2018 was a great success! PI's had nominated some of their own students to present, resulting in a variety of talks ranging from Chemistry over Biology to Immunology and Bioinformatics.

Matthew Rowe, Theresa Pankhurst and Kate Meads received prizes for the best talks.

This Symposium was also a nice way to farewell the Centre's former Director Paul Teesdale-Spittle. Paul had been the Director for the past three years with Wayne Patrick taking over the role since January 2019.

We're excited for this year and keep an eye out for the coming Symposium plans!



## Contact Us

If you have any questions, feedback or want to collaborate:

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