

CENTRE FOR

**BIOD****SCOVERY**

Victoria University of Wellington



## CfB Newsletter

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## From The Director's Chair

Kia ora, Biodiscoverers!

With the nor'wester howling outside, it is hard to believe that the "summer" holiday is almost upon us. But now is, indeed, the time to reflect on what a busy and successful year it has been for the Centre. As you will read elsewhere in this newsletter, collectively we have won grants and prizes, got promoted, and travelled to exotic locales...all in the name of Biodiscovery.



For me, the undoubted highlight of the past few months was the end-of-year Student Symposium. What a great day! We had over 85 delegates, including a van-load of visiting postgraduates from Massey University. The schedule was cunningly arranged like a thesis (Introduction, Methods, Results, Discussion) and we enjoyed learning about the impressive breadth and depth of our Centre's research. Congratulations – and thanks – to Vimal Patel, Alvey Little and Ruby Roach for doing all of the organising. You've set a high bar for next year's event – and hopefully also inspired some other keen students to organise the next one.

Speaking of Vimal, it pains me to tell you that his contract finishes this month. He has been great to work with for the past few months, by which I mean he is much more organised than me! Vimal's next contract is a return to the world of zoo management. There is still time to ask him your burning questions about primate husbandry before he leaves us...

I hope you will enjoy the break and I look forward to seeing you again in 2020. With new strategic directions coalescing into action, it promises to be another exciting year!

Ngā mihi nui,

Wayne Patrick, Director  
[wayne.patrick@vuw.ac.nz](mailto:wayne.patrick@vuw.ac.nz)

## News and Announcements

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### *Anti-viral screening capability*

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VUW has renewed its Screening Agreement with the Virology Branch of the National Institute of Allergy and Infectious Disease (NIAID), USA.

Under this agreement, we can submit requests for the evaluation of pure compounds (1-2 mg or preferably more) in a primary screen which contains representative viruses from a set of different viral families. Any such request is evaluated and when approval is given, we need to have shipped samples within 30 days. If you get a positive result, they ask if they can then screen against a much broader set of viruses.

Contact Simon Hinkley ([simon.hinkley@vuw.ac.nz](mailto:simon.hinkley@vuw.ac.nz)) and Richard Furneaux ([richard.furneaux@vuw.ac.nz](mailto:richard.furneaux@vuw.ac.nz)) for more information on the submission process.

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*Member achievements*

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- **Promotions**

To Associate Professor — Joanne Harvey, Simon Hinkley

To Senior Lecturer — Lisa Connor

- **Grant successes**

*Health Research Council*

Benji Compton

Wanting Jiao

Rob Weinkove

*Marsden Fund*

Dave Ackerley

Lisa Connor

Ian Hermans

Simon Hinkley & Janet Pitman (co-PI)

*MBIE Endeavour Fund*

Jeremy Owen

Farah Lamiabile-Oulaidi

- **Staff Excellence Awards**

Health and Safety Excellence Team Award — Ferrier Research Institute (Lawrence Harris, Benji Compton, Karl Shaffer, Simon Hinkley, Scott Cameron, Sarah Draper, Rachael Odlin)

Professional Staff Excellence Team Award — our friends and supporters in the Research Development Office.

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## *Student Conference support awards*

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For the second round of the 2019 Student grants to support conference attendance, the Centre was pleased to be in a position to offer increased awards to all who applied in this round. Congratulations to the following people who received funding to attend these local and international conferences:

### **Awardees (conference)**

Benjamin Clarke (NZIC, Christchurch)  
Cara Luiten (NZIC, Christchurch)  
Daniel Sheppard (NZIC, Christchurch)  
Georgia Carson (NZSO, Wellington)  
Joe Bracegirdle (Gordon Research Conference, USA)  
Michael Meijlink (NZIC, Christchurch)  
Natascha Lewe (NZMS, Palmerston North)  
Rebecca Dawson (EACR-AACR-ASPIC, Portugal)

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## *2019 Student Symposium*

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This year's Student Symposium took place on November 21st and featured talks from students across the Centre, including our friends from Massey University who travelled down for the day. It was great to get together and hear about the diverse work our researchers do.

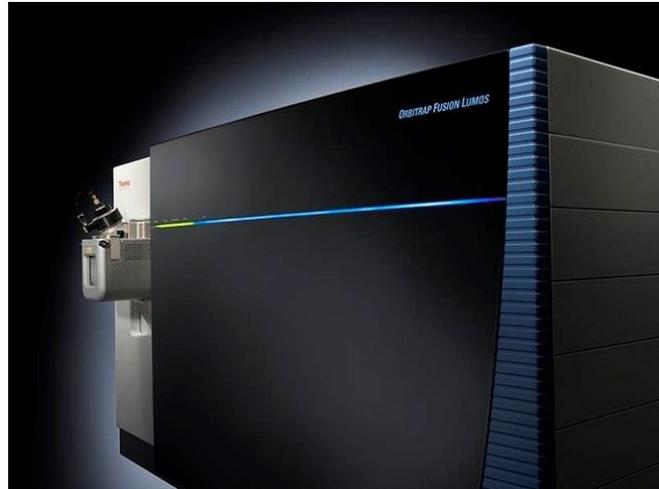


We'd like to thank the seventeen speakers who all volunteered to present their work, and to thank our session chairs Alvey, Lucy, Ethan, and Liam, for contributing to a great day. We also gave prizes to the best talk of each session and our congratulations go to the following speakers:

Introduction — Sophie Burling (Massey University); Methods — Chris Matthews (SBS); Results — Rudy Bundela (FRI); Discussion — Mariana Bulgarella (SBS).

We look forward to seeing you all at the next Biodiscovery event, more information about that will come in the New Year.

## #whatyougot?



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### *Thermo Scientific Orbitrap Fusion Lumos ETD Mass Spectrometer*

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The School of Biological Sciences has recently acquired the Thermo Scientific Orbitrap Fusion Lumos ETD Mass Spectrometer. Equipped with the brightest ion source, three mass analyzers including the selective quadrupole, fastest ion trap and ultra-high resolution Orbitrap, several enhanced fragmentation technologies like CID, HCD, ETD and EThcD, and a NanoLC and a UHPLC systems, this instrument provides superior sensitivity, selectivity, and versatility enabling researchers to perform a large number of different experiments and obtain the highest quality data. It can be used for many applications:

- Protein Identification and Characterization in complex biological materials from cells and tissues and specific preparations such as exosomes, chromatographic fractions, gel bands, recombinant proteins and vaccines. Due to its high sensitivity and high resolution, the instrument is capable of identifying low abundance proteins.
- Protein Quantitation. Comparative proteome analysis of mixtures of proteins from cell culture or tissue as well as less complex materials such as recombinant proteins and vaccines. This advanced instrument offers label-free and isobaric tandem mass labelled (e.g., TMT) quantitation with high sensitivity, accuracy and reproducibility. The TMT labelling enables the simultaneous analysis of 10 samples. Software packages are available for data analysis.
- Post-translational Modification (PTM) Analysis. The ETD and EThcD are particularly powerful for PTM analysis, such as glycosylation of proteins and peptides.

- Intact Protein and Natural Peptide Analysis. This instrument enables analysis of intact proteins and natural peptides (top-down proteomics), offering information about their molecular weight, PTMs, protein isoforms, and protein sequence through fragmentation of the intact proteins and peptides using ETD and/or ETchD within the mass spectrometer.
- Small Molecule Analysis (Metabolomics). This high-sensitivity and high-resolution instrument is suitable for identification and quantitation of small molecules such as lipids and polar metabolites. It can be used for the determination of highly accurate molecular formulae because the fine isotopic structure can be observed. Software including CompoundDiscoverer, LipidSearch and TraceFinder are available for data analysis.
- Characterization of polymers. The instrument is suitable for molecular weight structural characterization of synthetic polymer.

If you're interested in this technology, and for more information, contact Dr Lifeng Peng (Lifeng.peng@vuw.ac.nz)

## Impact through commercialisation

You may have heard Viclink is getting a new name and look for Christmas! This will be in line with the new university branding and their move to 'deemphasise' the Victoria and bring Wellington to the fore. From mid-February next year, we will be known as **Wellington UniVentures** and will be rolling out our new look and feel – watch this space. Over recent years Viclink has been rapidly growing and evolving into a very different organisation so the timing is perfect for this rebirth of sorts.

This is the fun time of year for us at Viclink, as we begin to wind down for the year we also start planning for the next year and all the exciting projects we want to progress. The best part for me is that you guys also have more time to think about new projects. With the lighter teaching load, you get a chance to get in the lab more and try out those "*I wonder if...*" things you have been putting off over term-time. This is sometimes where some of the most interesting commercialisation opportunities pop up. Our usual flow of intellectual property of course is still born out of the larger MBIE and Royal Society projects but sometimes it's the simple ideas that get most traction.

I know many of you have been putting in long hours recently putting together MBIE concepts and I have met with a few of you to help guide your commercial implementation thinking. Getting in at this early stage and building a strategy for what happens after the research provides a great narrative for strong proposals. As I always say it's never too early to engage with us even just to sense check those "*I wonder if...*" thoughts. We now have two fulltime research analysts in our team at Viclink who can assist looking at markets and competitive landscapes for your technologies. The best way to access this resource is to start with a quick chat with myself (or Matt Nicholson, Janice Cheng) usually over a coffee... from there we'll work with you to understand the idea and its current/future market potential. Where we see a 'nugget' of an opportunity there but maybe it requires a small piece of technical validation we can sometimes also assist with that too. This summer in fact I am supporting four such projects to de-risk and really get to the root of the proposition. These are small, very targeted projects but essentially, they are designed to validate the opportunity and determine whether it can be invested in for full commercialisation or if it requires further research before we can progress. I am very pleased to be involved in these projects that sit across the full spectrum of the Centre's focus; from Synthetic Biology to Medicinal Chemistry, Immunology and Target validation.

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. As always, if you just want a chat please don't hesitate to contact me, I'll even buy the coffee!

Jeremy Jones

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## Contact Us

- If you'd like to join us, sign up at <http://eepurl.com/gelgm5>
- You can reach us at [biodiscovery@vuw.ac.nz](mailto:biodiscovery@vuw.ac.nz)
- Check out our website at <https://www.wgtn.ac.nz/sbs/research-centres-institutes/centre-for-biodiscovery>
- We're on Twitter too: [@BiodiscoveryCen](https://twitter.com/BiodiscoveryCen)