



# Bio21 Institute Update

A quarterly review of highlights and news

Issue 4, January 2010



## **Message from the Director, Professor Tony Bacic.**

Best wishes for a happy and prosperous new year.

Since our last *Update*, I am pleased to advise that I have accepted the position as the new Director of the Bio21 Institute. Over the past two years as Interim Director, I have worked closely with the University's senior executive and faculty members to gain an understanding of the organisation's research strategy and agenda for the future and this has culminated in the preparation of a Business Plan for the period 2010-2014. This coupled with the high caliber resources and expertise and significance of the Bio21 Institute, and the potential for future development and growth, humbled and inspired me to accept this important role.

Over the next five years, I look forward to working with colleagues and affiliates from the areas of medicine, science, engineering, veterinary science and agriculture to implement our newly defined strategy. These include plans to expand our physical footprint for leading biotech research, training and education, building stronger links with industry partners and the potential for translational research, expanding our technology platforms and service offerings and nurturing a culture of interdisciplinary research excellence.

Beyond the Institute's glass walls, we will continue to contribute as a leading research institute within the 'Parkville Precinct'. With our longstanding collaborations and the opportunities that evolve from the critical mass built around current and emerging new institutes, collectively, we will secure our position as a world-class biosciences precinct.

I look forward to 2010 and thank you for your continued collaborations, interactions and support. Tony.

## **CRC Oral Health and CSL Ltd at Bio21 in agreement to develop and commercialise vaccine for gum disease.**

An international agreement to develop and commercialise the world's first vaccine to prevent and treat severe gum disease, periodontitis, was announced in December. Scientists from the University of Melbourne and CSL Limited, in the Cooperative Research Centre (CRC) for Oral Health Science, have identified candidate vaccine antigens for the disease.

Up to 30% of Australian adults suffer from the wide-spread gum disease, which causes gums to bleed and teeth to fall out. The condition has also been linked with heart disease, stroke, adverse pregnancy outcomes, dementia and cancer. In a new collaboration CSL and global human vaccines company Sanofi Pasteur will fund a program in the University-based CRC to further develop a vaccine to prevent and treat the disease.

Researchers at the CRC carry out their work across the Royal Dental Hospital of Melbourne and the Bio21 Institute in Parkville. The research and development arm of CSL Ltd is also based at the Institute. Read more in the [Melbourne Newsroom](#).



## **Free Radical Centre researchers at Bio21 investigate DNA repair enzyme in Kangaroos for clues to skin cancer therapy.**

Understanding how kangaroos repair their DNA could be the key to preventing skin cancer in the future, according to new research by Dr Linda Feketeová and Dr Uta Wille from the ARC Centre of Excellence for Free Radical Chemistry and Biotechnology based at the Bio21 Institute, The University of Melbourne. Together with scientists from The University of Innsbruck, Austria, Drs Feketeová and Wille are working toward reducing the number of skin cancer-related cases by investigating the chemistry behind potential skin cancer therapies. The teams are investigating a DNA repair enzyme found in kangaroos and many other organisms, but not humans. This enzyme is very effective in repairing a particular type of DNA damage linked to many skin cancers. Read the

article in the [Melbourne Newsroom](#).

**Sienna Cancer Diagnostics poised to deliver on Nobel Laureate's discovery.** In 2009, we celebrated the first Australian woman Nobel Laureate, co-discoverer of telomerase, Professor Elizabeth Blackburn. Bio21 Institute-based biotech company, Sienna Cancer Diagnostics, is soon to commercialise a diagnostic test based on the work of the Nobel Laureate. Not only does the Melbourne-based Sienna hold global rights to key telomerase intellectual property, its diagnostic tests for bladder, colorectal and prostate cancers are expected to be on the market in early 2011. "Sienna's cancer diagnostic tests will provide faster, non-invasive, less-expensive and highly reliable tests for a range of cancers, including bladder, colorectal, prostate and breast cancer," says Sienna Managing Director Dr Kerry Hegarty. Read more about [Sienna](#).



### **Bio21 Institute Platform Technology experts– sharing our expertise and knowledge.**

The Institute's key technologies are accessible to scientists from the broader scientific community along with the expertise and knowledge of our technical experts. As part of our commitment to training and education, two in-house events were held in the areas of mass spectrometry and metabolomics.

The *Mass Spec 101* lectures led by Dr Nick Williamson, provided a basic working knowledge of mass spectrometry, the core analytical chemistry platform for proteomics and metabolomics. With approximately 80 participants across University departments and faculties attending, the success of this series will see it repeated in 2010. A three day 'hands-on' workshop was organised by members of Metabolomics Australia (School of Botany and Bio21 Institute). Approximately 25 participants from Victorian and interstate institutions registered to attend the program providing practical and theory based training and the opportunity to bring together like-minded researchers.

(Photo by Joe Vittorio)

**Bio21 Bioinformatics Group Leader invited to present PhD course in the Czech Republic.** The opportunity to also share our expertise internationally was highlighted with Dr Vladimir Likic's (head of the Bioinformatics research group Metabolomics Australia) invitation to conduct an 18 lecture (4 day) PhD course on Bioinformatics and Systems Biology at the National Centre for Biomolecular Research (NCBR) in November. The NCBR is an independent research centre of the Faculty of Science, Masaryk University located in Brno, Czech Republic. The course covered elements of classical bioinformatics, computer simulations of signalling and metabolic pathways, systems view of biochemical networks, and analysis of 'omics data. [Read more](#) about Dr Vladimir Likic and Bioinformatics at the Institute.



**Consuls' General visit Bio21 as part of Melbourne Biotech Tour.** In October the Institute was pleased to be part of a Biotech Tour of Melbourne for Consuls' General representing 15 countries. Organised by Dept of Foreign Affairs and Trade and DIIRD, the program included tours and briefings at key facilities, kicking off at Bio21. Presenters included Dr Amanda Caples, the Director of Biotechnology and Science at DIIRD who spoke about Victoria's biotechnology agenda including the Institute's role in the bigger picture. Institute Director Professor Tony Bacic presented the University of Melbourne's capability and research strengths, including the new Research Institutes, leading onto the Bio21 Institute's purpose, its people and their work. To give them a glimpse of some of the exciting research conducted at Bio21,

the group was hosted by Professor Eric Reynolds and Dr Brent Ward of the CRC for Oral Health Sciences and Dr Alison Funston and Dr Tich-Lam Nguyen from Professor Paul Mulvaney's Nanoscience labs. Read more about [Professor Eric Reynolds](#) and the CRC for Oral Health Sciences. Read more about [Professor Paul Mulvaney](#) and nanotechnology at the Institute. (Photo: H Varnavas Bio21 Institute)

**Bio21 congratulates our recent award recipients.** Institute members continue to be recognized for their work and achievements. Recent award recipients include:

*Dr Laura Vella* who was awarded the University of Melbourne's Faculty of Medicine, Dentistry and Health Sciences, Dean's Award for Excellence in a PhD Thesis for her thesis titled *Investigating the spread and propagation of infectious prions*. Laura completed her PhD with Associate Professor Andy Hill in the Department of Biochemistry and Molecular Biology and is now undertaking a postdoctorate position with Associate Professor Roberto Cappai in the Department of Pathology at the Institute.

*Professor Frances Separovic*, recently appointed as new Head of the School of Chemistry at the University of Melbourne, and a leader in biological solid-state NMR research, was recently awarded the Australian Society for Biophysics Bob Robertson Award. Awardees receive a medal in recognition of their outstanding contributions to the field of biophysics in Australia and New Zealand based on the quality and impact of their published work in journals of high international reputation; service to the biophysics community and excellence in teaching of biophysics.

*Dr Brian Grieg-Fry* from the Department of Biochemistry and Molecular Biology at Bio21, was recently awarded the University of Melbourne's 2009 Woodward Medal in Science and Technology. The award recognizes research that has made a significant contribution to knowledge in the field of science and technology. Brian's work focuses on venom research and has recently included the komodo dragon's hunting strategy and new studies that all octopuses are venomous. His work has been published internationally and made news headlines in 2009.

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