

## Small Molecules Excite Big Pharma

**Better treatments for fibrosis sufferers are on the horizon following Shire acquiring the start-up biotechnology company Fibrotech Therapeutics in May this year.**

The US \$75 million plus milestones purchase by Shire, a global specialty biopharmaceutical company, will accelerate the development of a new class of drugs to prevent the health burdens associated with fibrosis. The purchase includes additional payments based on successful completion of development and regulatory milestones.

Bio21 Institute and School of Chemistry Associate Professor Spencer Williams co-founded Fibrotech Therapeutics in 2006 with colleague Professor Darren Kelly, an Honorary Principal Fellow of the Bio21 Institute based at the School of Medicine and St Vincent's Institute of Medical Research.

*"The team at Fibrotech are very excited about this acquisition as Shire are strategically aligned with our commitment to renal and fibrotic conditions, including rare diseases – areas of high unmet medical need".*

PROFESSOR DARREN KELLY, FIBROTECH CEO

The cross disciplinary medicinal chemistry program was initiated with the aims of developing targeted therapeutics for pathological fibrosis in the context of chronic kidney disease, which includes type 1 and 2 diabetic nephropathy. Fibrotech's lead compound FT011 – initially commercialised with support from the Medical Research Commercialisation Fund, Brandon Capital Partners, Uniseed and the Australian NH&MRC – is an antifibrotic drug that prevents the tissue fibrosis associated with diabetic nephropathy, a leading cause of end stage renal disease.

Associate Professor Williams heads the laboratory where the compounds were discovered and first synthesised.



L–R: Dr Chris Nave (Brandon Capital Partners), Fibrotech's Associate Professor Spencer Williams and Professor Darren Kelly at the Bio21 Institute. Photo: Helen Varnavas, Bio21 Institute

*"This is a good news story of great Australian science making it in the international marketplace. We are delighted that such a well-respected and innovative company will be taking over the technology and its development. This provides the greatest potential for bringing this new class of drugs into the clinic to provide benefits to patients".*

ASSOCIATE PROFESSOR SPENCER WILLIAMS

Shire will undertake the further development of FT011, as well as Fibrotech's library of novel molecules, including FT061 – orally-available small molecules with the potential to address both the inflammatory and pro-fibrotic components of fibrosis.



Professor Tony Bacic  
Photo: Helen Varnavas, Bio21 Institute

## Director's Message

Welcome to 'The Loop', a new Bio21 Institute quarterly newsletter.

We are delighted to share a number of achievements and highlights reflecting the Institute's deep commitment to engaging industry and broader communities with the tangible benefits of research excellence, translation and innovation.

During 2014, the Institute has been pivotal in a number of key initiatives, some of which we share with you in this issue.

Inspiring the next generation of students and teachers was the vision behind the new Elizabeth Blackburn School of Sciences, a sub-school of The University High School. This partnership aligns with our aim to develop the continuum from 'school to bench to workplace' and our commitment to foster and sustain Australia's biotechnology sector.

Systems biology is widely accepted as the new frontier for 21st century research in tackling our biggest health and well-being challenges, and is being deployed by the Institute to catalyse discovery-led translational outcomes. In this issue, the Institute's 'omics capabilities are profiled, including our programs that help enhance researchers' knowledge on the diversity of these 'multi-omics' technologies and their applications.

We look forward to celebrating the Institute's 10 year anniversary in 2015 with a series of programs and activities that engage all our communities. We hope you can join us as part of these celebrations.

I urge you to continue reading our newsletter for more about the Bio21 community's people, their work and the breadth of our engagement.

Warm regards,  
Tony



Official opening of the Hub on 22 July 2014. L-R Lesley MacLeod (DIAL CEO), Bhesh Bhandari (UQ), Sally Gras (Hub Director UM), Ian Gentle (UQ), Aidan Byrne (CEO ARC), Margaret Sheil (UM).  
Photo: Dairy Innovation Australia

# Paving the way for dairy innovations

**Chemical and Biomolecular Engineer Associate Professor Sally Gras and her group at the Bio21 Institute are conducting dairy research that aims to increase innovation in dairy manufacturing.**

Associate Professor Gras is leading a new consortium funded by the Australian Research Council (\$5 million) with further industry contributions. The Dairy Innovation Hub is a collaboration between three of Australia's leading dairy research groups. Launched in July, the five year program brings together The University of Melbourne, University of Queensland (UQ) and Dairy Innovation Australia to address some of the major challenges identified as constraints to the business growth and productivity of the dairy manufacturing sector.

The Gras team will be undertaking microstructure research, applying high resolution microscopic techniques to characterise dairy products such as rennetted cheeses, cream cheese, sour cream and yogurt.

*"Advanced microscopy tools and techniques provide a new set of eyes for Australian cheese manufacturers, they enable us to understand how manufacturing processes alter cheese and dairy product structure". ASSOCIATE PROFESSOR SALLY GRAS*

Advanced microscopic techniques available at the Institute such as Scanning Electron (cryo-SEM), Confocal (CLSM) and Transmission Electron Microscopy (TEM) are used to examine samples at a laboratory, pilot and manufacturing scale. This information is then correlated with the results of chemical and physical testing and other indicators of product quality.

The Gras team is working closely with collaborators at UQ to link product microstructure to Tribology and other sensory methods. The research will assist in the development of products such as low fat and low salt variants, extended shelf life products and products with new textural properties for export markets.

Dairy manufacturing is worth more than \$2billion to Australia's economy and will continue to increase as the demand for food in Asia doubles in coming years.

"We will work to find solutions and opportunities for the Australian dairy industry to make the most of our geographic location and to grow our exports into the lucrative Asian market," said Associate Professor Gras.

## New research to develop tools for biomonitoring

Dr Sara Long from the Centre for Aquatic Pollution Identification and Management, Zoology's Professor Mick Keough and Dr Allyson O'Brien and Metabolomics Australia's Professor Malcolm McConville are developing new tools for monitoring estuarine pollution.

These tools will help to identify catchments and waterways that are at greatest ecological risk, as well as the contaminants most responsible for that risk, in order to develop appropriate management and remediation efforts.

Contamination is a particular problem for Australian estuaries as 81% of the population lives within 50 kilometres of the coast, causing increased anthropogenic pressures and sources of contamination on lower catchment areas and estuaries. Estuaries support high biodiversity and ecologically important species, and this project will demonstrate how these approaches can be applied to contaminated estuarine environments in Victoria or elsewhere in Australia.

Professor McConville leads the Bio21 Institute node of Metabolomics Australia program which will provide computational and analytical capability and expertise.

"By exploiting recent informatics and technological advances in metabolomics and ecogenomics, the project will identify key biomarkers for maintaining the health of these ecosystems," he said.

Dr Long has already shown that experimental exposure to heavy metals can lead to changes in metabolite levels in indicator organisms for particular ecosystems. "Metabolomic techniques offer great promise in environmental monitoring, but they must be cross-validated against existing methods to derive the best 'toolbox' for biomonitoring programs," she explained.

The three-year ARC Linkage project is a collaboration with partner organisations Melbourne Water and Sydney's CSIRO Ecogenomics laboratory, and involves both laboratory exposures and field validation in test estuaries around Victoria.



Dr Sara Long retrieving cages containing shrimp from a polluted drain in an urban catchment.  
Photo: Kate Berg, Western Water

## Metagenomics of Antarctic ice cores and geothermal hot springs

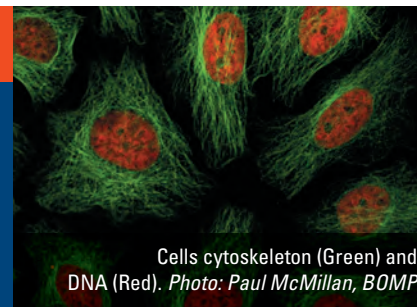
The study of Antarctic ice-cores and New Zealand hot spring microbial DNA is all in a day's work for Postdoctoral Research Fellow Dr Mark Schultz, a member of Dr Kathryn Holt's group at the Bio21 Institute.

Dr Holt and Dr Schultz are interested in understanding the evolution of drug resistance in pathogenic bacterial outbreaks, both locally and globally. They are working alongside colleagues – including Earth Sciences group leaders Dr John Moreau and Dr Robyn Schofield, Botany group leader Dr Alex Johnson and PhD student Caitlin Gionfriddo – to survey microbial DNA from primitive and pristine environments for metal and antibiotic resistance genes.

Resistance to heavy metals and antibiotics by bacteria is an ancient phenomenon that has likely been occurring since the early days of life on earth. The aim of this work is to contrast the form and function of resistance genes found in these environments – environments that approximate early earth, or which are far removed from human influences – with resistance genes found in sterile clinical settings.

*"It is hoped that a comparative genomics approach will yield a better understanding of the tempo and mode of the evolution of antimicrobial resistance genes in clinical environments". DR MARK SCHULTZ*

The work will be broken down into two components to be undertaken in 2014-2015. One component will be looking at metagenomic DNA data from Antarctic ice cores and is funded under the Joyce Lambert Antarctic Research Seed Funding Scheme. The sea-ice core samples were supported by an Australian Antarctic Science grant, including logistical support. The second component will look at metagenomic DNA data from toxic, metal-laden, geothermal hot-spring environments and is funded under the University of Melbourne Early Career Researcher Grant Scheme.



Cells cytoskeleton (Green) and DNA (Red). Photo: Paul McMillan, BOMP

## Seeing is Believing

Engaging secondary school students in programs that encourage them to study maths and science, and potentially pursue a career in science, is a major focus at the Bio21 Institute.

As part of National Science Week in August, year 9 and 10 students with an interest in science participated in the 'Seeing is Believing' event. Due to its popularity last year, the Institute extended the program to involve double the attendees. More than 100 students and their teachers from 10 schools across Melbourne and the wider metropolitan area attended this year's event.

Over two days, students were informed and inspired about scientific discovery. This included: an introduction to cell biology and light microscopy; a series of hands-on and interactive activities; the opportunity to make scientific images using microscopes; and a tour of the institute's advanced microscopy facility.

Dr Paul McMillan, Manager of the Biological Optical Microscopy Platform facility, coordinated the scientific program with the aim of developing an understanding of how scientists use light microscopy to investigate the biology of the body and how disease is caused.

*"By taking students through an experiment including applying methods, investigating a question and identifying techniques, they were able to learn more about the biology of diseases such as Cancer, Malaria and disorders such as pre-eclampsia and chemo-resistance". DR PAUL MCMILLAN*

Researchers from multiple disciplines acted as hosts and presenters, allowing them to engage with the community and develop their science communication skills.

Communications and Public Relations Manager Helen Varnavas coordinated the engagement with the schools and explained the importance of such programs. "Exposing students to scientists and their work via a mix of presentations and activities helps students understand what scientists do on a daily basis".

# Inspiring the next generation of scientists



Official Opening of EBSS on 6 March 2014  
Photo: Casamento Photography

## The Elizabeth Blackburn School of Sciences

The Elizabeth Blackburn School of Sciences (EBSS) opened on Thursday 6 March 2014. Established with the aim of inspiring the next generation of scientists and teachers, EBSS is a sub-school of The University High School, with select entry open to students across Victoria. Established within the internationally renowned Parkville Precinct, it is a result of the collaboration between the Victorian Government, The University High School and The University of Melbourne, including the Bio21 Institute and Melbourne Graduate School of Education.

Named after the 2009 Nobel Laureate Elizabeth Blackburn, an alumna of both University High School and the University of Melbourne, the dedicated school of sciences caters for 200 high performing and passionate year 11 and 12 students in the fields of Science, Technology, Engineering and Maths (STEM). Built to 5 star green star rating, it is an outstanding, state-of-the-art facility including lecture theatres, science laboratories and break-out spaces for both formal and informal learning.

The Bio21 Institute's vision is to develop an environment that connects 'school to bench to workplace'. Co-locating EBSS at the Bio21 Institute site facilitates engagement between students, teachers and scientists at the University and the Parkville Precinct. This exposes students and teachers to the career options available in science and provides insights into the latest in science and cutting-edge technologies.

The Elizabeth Blackburn School of Sciences is an investment in the future growth and sustainability of Victoria's science and biotechnology sector and will play a key role in helping keep Victoria globally competitive by increasing the number and quality of people in science.

As part of an ongoing commitment to inspiring the next generation of scientists, researchers at the Bio21 Institute and University of Melbourne are participating as science mentors in the Extended Investigations project – a subject that is part of the year 11 curriculum at the Elizabeth Blackburn School of Sciences (EBSS).

Researchers across the broader science, technology, engineering and maths fields are matched up with students according to common research interests. Nanoscience researcher Dr Tich-Lam Nguyen has been matched with Year 11 EBSS student William, who has a keen interest in nanotechnology with a biology focus.

Dr Nguyen comes qualified and enthusiastic to the mentorship role. With a PhD in chemistry and having participated in community work as a student, she regularly engages in outreach programs with high schools visiting Bio21.

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*"I get excited when students are excited by science, so this is a great opportunity to share my knowledge and passion for science". DR TICH-LAM NGUYEN*

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Mentors for the project provide guidance, allowing students to gain technical and analytical skills as well as insight into the scientific process, including what scientists know and how they need to think. This unique collaborative opportunity helps to improve the student's understanding of science as they lead their own exploration into developing their scientific questions.

Dr Nguyen has been helping William to develop his topic. "In our first meeting, I showed William around and explained some of the research undertaken by our group," she says. "For William, work on anti-bacterial silver nanoparticles in band-aids really stood out". She then suggested internet research techniques, and ways to consider developing his questions. William then broadened his knowledge on how to further understand and analyse scholarly science material. His research led him to find more information about how silver nanoparticles affect the environment, which helped him focus his research question about their effect on aquatic environments.

"I always encourage William to ask lots of questions which prompts him to explore and articulate his own research questions," says Dr Nguyen.

The two will continue to meet as William works towards completing his literature report for final submission and presentation at a scientific symposium.



Mentor Dr Tich-Lam Nguyen with student William.  
Photo: Maggie Scott, Bio21 Institute

# 'Omics – the 21st century frontier

'Omics technologies have emerged as critical 21st century frontier tools for health, agricultural and environmental research.



Professor Andrew Hill presents at the recent Omics Week @ Bio21 three day series of conferences. Photo: *Metabolomics Australia*

Genomics, proteomics, metabolomics and lipidomics are key 'omics platform capabilities available at the Bio21 Institute that provide new ways to understand biological processes.

Systematic identification, characterisation and quantitation of the complement of biological molecules produced by a particular cell, tissue or organisms such as genes, proteins, metabolites and lipids (including their modifications and specific functional interactions) can yield unprecedented amounts of information regarding the processes that regulate their structure, function, and dynamics.

As the onset and progression of various diseases are known to be associated with the disruption of these processes, 'omics analysis strategies can potentially facilitate improved disease diagnosis and treatment. Continued development to the Bio21 'omics platform technologies and their applications will help to broaden the depth of knowledge that is required to achieve these goals.

'Omics technologies enable the high throughput analysis of complex mixtures of biological molecules, which substantially increases the amount of 'big data' generated. The challenge lies in processing all this data.

At Bio21, integrating the output of 'omics technologies with bioinformatics, computational biology and associated expertise enables the potential to tackle some of society's biggest challenges in more targeted ways.

Individually, each of the 'omics fields provide a distinct outcome. However, their full potential is realised when they are applied collectively.

## Professor Gavin E. Reid

Professor Gavin E. Reid is a bioanalytical chemist and an alumni of the University of Melbourne. In June, he returned to Melbourne after 10 years at Michigan State University in the USA to establish his research group at the Bio21 Institute. He holds a joint appointment with the School of Chemistry and the Department of Biochemistry and Molecular Biology.

With over 25 years' experience in the development of enabling analytical biochemistry, mass spectrometry and associated chemical strategies for biomolecular analysis, the major goal of Professor Reid's group is to develop and apply 'integrated-omics' strategies to understand the complex interacting functional roles of proteins, lipids and metabolites in diseases such as cancer, diabetes and diabetic complications.

He also noted that there are limited places in the world that feature a rich interdisciplinary research environment. "I'm excited to have the opportunity to return to Melbourne to contribute my expertise in the strategically important areas of bioanalytical chemistry and technology development," Professor Reid said.



Bioanalytical Chemist Professor Gavin E. Reid  
Photo: *Helen Varnavas, Bio21 Institute*

## Professor Gavin E. Reid Research Career Timeline

**2014:** Professor of Bioanalytical Chemistry and Group Leader at Bio21 Institute, Chemistry/Biochemistry and Molecular Biology, University of Melbourne.

**2009:** Associate Professor with tenure, Michigan State University, USA.

**2004:** Assistant Professor, Michigan State University, USA.

**2000-2002:** Post-doctoral research with Prof. Scott McLuckey at Purdue University and Assistant Member at the Ludwig Institute for Cancer Research.

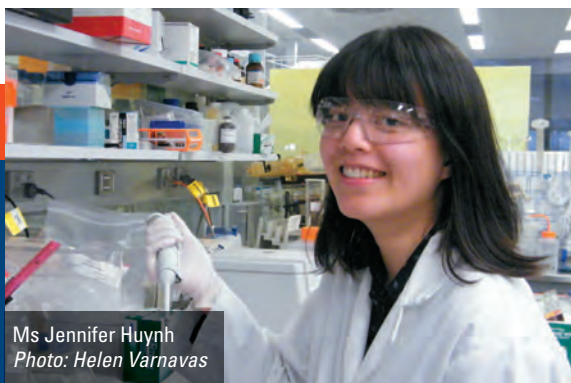
**2000:** PhD in Chemistry, University of Melbourne, under the joint supervision of Prof. Richard O'Hair and Prof. Richard Simpson.

**1997:** Post Graduate Diploma in Science, University of Melbourne.

**1991:** Associate Diploma in Applied Science, Swinburne TAFE.

**1987-1997:** Research Assistant with Prof. Richard Simpson at Joint Protein Sequencing Laboratory, Ludwig Institute for Cancer Research, Parkville.

*"One of the key attractions for the move to Bio21 was the Institute's investment in 'omics platform technologies, and its extensive chemical, biomedical and clinical research focus within Bio21 and in the surrounding Parkville Precinct".*  
PROFESSOR GAVIN REID



Ms Jennifer Huynh  
Photo: Helen Varnavas

## Graduate Profile

### Jennifer Huynh

Ms Jennifer Huynh is a fourth year PhD student working on inflammation and wound healing in the context of periodontal disease under the supervision of Associate Professor Glen Scholz in the Melbourne Dental School and the Oral Health CRC at the Bio21 Institute.

Ms Huynh was awarded a 2014 Bio21 Institute Postgraduate Travel Award, which is designed to add value to the education, research development and training of graduates at the Institute. She used it to attend the 'Inflammation, Infection and Cancer Keystone Conference' in British Columbia, Canada and was also able to visit Professor Edward Putnins' laboratory in the Department of Oral Biological and Medical Sciences at the University of British Columbia, Vancouver.

At the conference, Ms Huynh presented a poster titled: 'The novel IL-1 family member, IL-36G, is a downstream target of IRF6 in response to *Porphyromonas gingivalis*', which forms a component of her PhD project. The conference exposed Jennifer to the very latest developments in the rapidly moving fields of inflammation, host defence and cancer.

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"This was my first international conference and the opportunity to present my work to leading scientists in my field was exciting". MS JENNIFER HUYNH  
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Ms Huynh's project 'Interferon Regulatory Factor 6 (IRF6) in the host response to *Porphyromonas gingivalis*' involves the characterisation of the inflammatory and wound healing response during *P. gingivalis* infection and how this can be dysregulated and skewed towards a host destructive response which manifests in periodontitis. This aligns well with the work conducted by Professor Putnins' group at University of British Columbia where they focus on tissue regeneration and wound healing in periodontal disease. Ms Huynh was able to present her work to Professor Putnins and members of his laboratory, providing her with the opportunity to receive valuable feedback.

Ms Huynh's research career has already seen her publish two first author papers and co-author a third paper.

"It was an invaluable chance to network with international scientists in the field, share my research and build my network for future postdoctoral opportunities," she said.

# BIO21 Brief

### Professor Andrew Holmes

The Bio21 Institute would like to congratulate Professor Andrew Holmes who was appointed University of Melbourne Laureate Professor Emeritus this year in recognition of his lifetime achievement and eminence as a public intellectual. He is widely acknowledged for his contributions to the materials and biological sciences that lead to outcomes benefitting society.

Professor Holmes was also elected President of the Australian Academy of Science in late 2013, and assumed the role in May this year.

### Dr Michael Griffin

Early career researcher, Dr Michael Griffin from Bio21 and Biochemistry and Molecular Biology at The University of Melbourne was granted an Australian Research Council Future Fellowship for 2014, with funding of \$772,104.00 over five years. His project investigates and assesses the structural mechanisms of lipid binding by apolipoproteins, and how these proteins balance this function with their propensity to misfold.

### Professor Frances Separovic

Professor Frances Separovic was elected Secretary of the U.S. Biophysical Society, of which she has been a member since 1985. Professor Separovic will begin her four-year term as Secretary on July 1, 2015. Founded in 1958, the Biophysical Society is a professional, scientific society established to encourage development and dissemination of knowledge in biophysics.

Professor Separovic is a Biophysical Chemist specialising in NMR spectroscopy. She has also acted as President of the Australian Society for Biophysics (1999-2001) and Director of Australian New Zealand Magnetic Resonance Society (1996-2000).

### Professor Richard O'Hair

Bio21 Chemistry Professor Richard O'Hair was elected an inaugural Fellow of the Australian New Zealand Society for Mass Spectrometry (ANZSMS) early this year. Fellow status of ANZSMS recognises and honours distinguished members' contributions to the field of mass spectrometry and their ongoing support for the Society.

### Professor David Penington

The Institute congratulates Professor Emeritus David Penington who was named 2014 Victorian of the Year for his significant and valuable contributions to the Victorian community and his work in medical education, research policy and public health.

Professor Penington is known and respected for his work and leadership in HIV/AIDS public health strategies. More recent work has focussed on the reduction of harm caused by drug abuse.

The Bio21 Institute's David Penington Building is named after the Professor Emeritus, who was chairman of the board in the founding of Bio21.

## Distinguished malaria researcher joins Bio21

Internationally renowned malaria researcher Professor Karen Day has returned to Melbourne and recently established her research group at the Bio21 Institute. The Day Group investigates the role that human variation and parasite diversity play in modulating the dynamics of chronic infection, in influencing susceptibility to disease and in regulating transmission from human to mosquito. Their research combines genomics, computational biology and molecular epidemiology approaches to population-based studies of malaria to better improve disease control.

An alumni of the University of Melbourne, Professor Day is a distinguished malaria researcher dedicated to the improvement of global health.

## New therapy targets aggressive form of leukaemia

Professor Michael Parker, Bio21 Honorary Professorial Fellow and Deputy Director of St Vincent's Institute of Medical Research, is collaborating with researchers at South Australia's Centre for Cancer Biology (CCB) and CSL Limited in promising new cancer research.

Led by Professor Angel Lopez, Co-Director of CCB, the research outlines how the newly developed therapeutic antibody, CSL362, binds to Acute Myeloid Leukaemia (AML) cancer cells, and is able to recruit the body's own immune system to kill the cancer cells, potentially preventing relapse of the disease. The study was published in the journal *Cell Reports*.

## Examining Insecticide Resistance with Mass Spectrometry

New research using twin ion mass spectrometry explains how fruit flies express a single gene at high levels to rid themselves of a common insecticide.

Professor Philip Batterham's group at Bio21 has been applying this technique in collaboration with Chemistry Professor Richard O'Hair and colleagues. Their research has the potential to protect food crops around the world, as the more resistant to insecticides pests become, the more of a threat they are to crops. The findings were published in the journal *Analytic Chemistry*.

## DNA 'origami'

Associate Professor Sally Gras from Bio21/Chemical and Biomolecular Engineering and colleagues have collaborated with New York University Chemistry Professor Nadrian Seeman on breakthrough research turning previously one-dimensional nanomaterials into two dimensions using DNA 'origami'.

In their work, the scientists are growing protein fibres within a DNA origami structure into rods of peptides that match the strength of spider's silk. The results – smaller, stronger materials leading to increased operating speed – have the potential to improve consumer goods such as electronics and photonics. Professor Seeman is the lead author of a paper publishing their findings in *Nature Nanotechnology*.



Dr Matthew Dixon

## Postdoctoral Profile

### Matthew Dixon

Dr Matthew Dixon is a member of Professor Tilley's group at the Bio21 Institute, and a National Health and Medical Research Council (NHMRC) Training Fellow with Biochemistry and Molecular Biology at the University of Melbourne.

In 2014, he received the Wettenhall Establishment Award, an annual postdoctoral researcher award established in recognition of the outstanding vision of the inaugural Director of the Bio21 Institute, Professor Richard (Dick) EH Wettenhall, and his commitment to the development of early career researchers.

Dr Dixon investigates the severe forms of malaria disease, cerebral and placental malaria. These disease states are caused when the malaria parasite-infected red blood cells become sticky, lodging in the blood vessels within the body. Parasite sticking in organs such as the brain and placenta can lead to severe forms of the disease.

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*"Our current understanding of the adhesion process comes from static snapshots collected under non-physiological conditions".* DR MATTHEW DIXON

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Dr Dixon will investigate this severe disease process utilising the Bio21 Institute's super resolution optical microscopy and electron microscopy platforms, coupled with microfluidics.

He envisions the long term human health outcomes of his research. "By mimicking the conditions in small blood vessels we can gain a deeper understanding, and develop tools for controlling this disease and potentially eradicating it altogether" he explained.

Having gained his PhD qualifications and experience from the University of Queensland and the Queensland Institute for Medical Research, Dr Dixon joined Professor Leann Tilley's research group at La Trobe University in 2009 as a postdoctoral research fellow. He relocated as part of Professor Tilley's group to the Bio21 Institute in 2011.

# CELEBRATING 10 YEARS IN 2015



2015 marks the 10 year anniversary for the Bio21 Institute. Officially opened in June 2005, we are excited as we look back over the past decade, reflecting on the journey that leads us to this significant milestone.

The Bio21 Institute's vision to improve health and the environment through innovation in biotechnology and industry engagement has been realised on many levels as we have worked to bridge inter-relationships across research, industry and community.

A series of events, initiatives and programs will recognise our people, showcase our achievements and share our vision for the next ten years.

We look forward to celebrating ten years at the Bio21 Institute with you and will keep you updated.

## Friends of Bio21

As we head towards our 10 year anniversary, we are reflecting on the many highlights, stories, events and the people who have been an important part of the Bio21 Institute. Friends of Bio21 is a program to re-connect with former members including staff, students and industry partners, as well as engaging with new friends who are interested in being part of the broader Bio21 community.

If you would like to be part of *Friends of Bio21*, please be in touch. For more information contact our Communications and Public Relations Manager Helen Varnavas [varnavas@unimelb.edu.au](mailto:varnavas@unimelb.edu.au).



### World renowned Geneticist joins Bio21 Institute for 2015 celebrations

Professor Hugo Bellen, Investigator at Howard Hughes Medical Institute (Maryland) and Distinguished Professor at Baylor College of Medicine (Texas) will be joining us in May 2015 as part of our ten year celebrations.

Awarded a prestigious University of Melbourne Miegunyah Distinguished Visiting Fellowship, Professor Bellen will present a series of events including a public lecture and research seminars.

Professor Bellen is widely regarded as one of the best geneticists in the world. Using a 'systems' approach, his research aim is developing and deploying powerful genetic tools to study neuro-degeneration.

### Shining a light on Alzheimer's disease

You can hear Professor Michael Parker's public lecture held in July at the Bio21 Institute. The event was part of Melbourne's public lecture series celebrating 2014 International Year of Crystallography.

Professor Parker is a Professorial Fellow at the Department of Biochemistry and Molecular Biology and the Bio21 Institute. He is Deputy Director of St. Vincent's Institute of Medical Research in Melbourne where he heads its Structural Biology Laboratory and the ACRF Rational Drug Discovery Centre.

Visit Seminars Online at the Bio21 Website to listen to a recording of the lecture: [www.bio21.unimelb.edu.au/events-and-seminars/seminars-online](http://www.bio21.unimelb.edu.au/events-and-seminars/seminars-online)

*Photo: Helen Varnavas, Bio21 Institute*



## What's on at Bio21

### September 4

9.30am to 1.00pm

#### Careers Symposium: Discovering the World Beyond Postgraduate Study

Providing an insight into a range of career pathways, this event features speakers from a variety of fields and disciplinary backgrounds and opportunity for interactive discussions.

Hosted by graduates from postgraduate student groups: Chemistry Postgraduate Society (CPS), Postgraduates of Veterinary Science (POVS) and Biochemists and Molecular Biologists at the Bio21 Institute (BAMBII) in conjunction with the Bio21 Institute.

### September 12

1.00pm – 5.00pm

#### The Advanced Fluorescence Microscopy Symposium

Presented by the Biological Optical Microscopy Platform (BOMP) in association with the Bio21 Institute, this half day symposium will be a mix of technical seminars, advanced imaging session and a plenary session. ECR and students will also present posters and oral presentations.

Aimed at current fluorescent microscope users at the early career researcher/ graduate student level, this event will highlight the applications of fluorescence microscopes, within the platform.

Register by 5 September, [www.microscopy.unimelb.edu.au/bomp2014/](http://www.microscopy.unimelb.edu.au/bomp2014/)  
Enquiries: [bomp-enquiries@lists.unimelb.edu.au](mailto:bomp-enquiries@lists.unimelb.edu.au)

### October 2014

#### Metabolomics Event

Following a successful Metabolomics Research Symposium part of Omics Week @ Bio21, Metabolomics Australia will be organising a program of theory and practical sessions. More information will be available on the Bio21 Institute website.

Enquiries: David De Souza, call (03) 8344 2487 or email [desouzad@unimelb.edu.au](mailto:desouzad@unimelb.edu.au)

### For the latest updates

For the latest updates about events and seminars at Bio21, please visit the website at [www.bio21.org](http://www.bio21.org). If you would like to receive regular updates on Bio21 Institute news, seminars and events via email, contact Helen Varnavas to subscribe to the Bio21 Institute mailing list: [varnavas@unimelb.edu.au](mailto:varnavas@unimelb.edu.au)

The Bio21 Institute newsletter, The Loop, is produced by the Institute's Communications Team. For information or to provide feedback please contact Helen Varnavas [varnavas@unimelb.edu.au](mailto:varnavas@unimelb.edu.au). Articles and photographs that appear in this publication may not be reproduced without permission of the Bio21 Institute.

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