



Bio21 Institute Update

A quarterly review of highlights and news

Issue 5, March 2010



Message from the Director, Professor Tony Bacic.

2010 has commenced with a busy first quarter highlighted by successes and achievements that are indicative of the caliber of our scientists, significance of our work and breadth of our relationships. From the onset I would like to congratulate Bio21's Honorary Professorial Fellow Michael Parker on his recent election as a Fellow of the Australian Academy of Science. We also extend our congratulations to former Bio21 member, Professor Trevor Lithgow who also received this prestigious award.

The beginning of the year also sees the Bio21 community come together for the annual Institute Research Symposium. Organised by members of the RA and Postdoc (RAPD) Association, the event showcases the diversity of our disciplines with the aim of encouraging

discussions and potential collaborations. We were very pleased to make welcome the Dean of Science, Professor Rob Saint who attended a number of sessions.

The importance of research into Alzheimer's and related diseases of the aging brain was recognized in the recent round of NHMRC Program funding with more than \$14 million awarded to the Neurodegeneration Program. Headed by Professor Colin Masters, the collaboration includes Bio21 based groups headed by Associate Professors Roberto Cappai, Kevin Barnham (Pathology) and Andrew Hill (Biochemistry and Molecular Biology).

From an organizational perspective, the new interdisciplinary research institutes seed funding program urged researchers across departments and institutions to open their minds to ways they could collectively tackle some of society's bigger issues. We were pleased that from the biotechnology theme, six projects involving nine Bio21 based researchers were funded totaling \$283,000.

Enhancing our international relations continues both on our own ground and whilst travelling abroad. In April, I will present at two key institutes in Korea – the Korea Research Institute of Bioscience and Biotechnology (KRIBB) and Soon Chun Hyang University. Hosted by Professor Sang-Ki Rhee, an Honorary Fellow with Bio21 during 2009, discussions will also be held to explore opportunities to enhance links between our institutions.

Finally, on a broader front, two major initiatives launched in March aim to enhance links between the network of institutions and organisations involved in our sector. A new publication from the University outlines the research strength and investment in life sciences and ICT research within the Parkville Precinct. This coupled with the launch of the Victorian BioPortal Network website provide valuable resources, connecting people and capabilities available to the wider research community. Tony.

More than \$14 million awarded to Neurodegeneration Program. Announced in the recent round of NHMRC Program Grants, the Neurodegeneration program headed by Professor Colin Masters will tackle the issue of the aging brain namely diseases such as Alzheimer's and other related diseases. The collaborative program includes a number of Bio21 based research groups led by Associate Professors Kevin Barnham, Roberto Cappai (Pathology) and Andrew Hill (Biochemistry and Molecular Biology). Research is funded for the next five years allowing the team to focus on finding new methods for early diagnosis and therapeutic interventions which will allow them to determine whether it is possible to delay the onset or improve the way in which the brain copes with these diseases.



Congratulations to Professor Michael Parker elected Fellow of the Australian Academy of Science.

Michael Parker, an Honorary Professorial Fellow with the Bio21 Institute and Dept of Biochemistry and Molecular Biology, has received the prestigious honour of being elected a Fellow of the Australian Academy of Science (FAA) in recognition of his work on protein crystallography of membrane-associated proteins. A leader in structural biology, Michael's expertise has also made a significant contribution at Bio21, with research collaborations formed across a number of disciplines and industry including Professor Phil Batterham (Genetics), Professor Malcolm McConville and Assoc Professor Matt Perugini (Biochemistry and Molecular Biology). He joins the honour list with fellow FAA recipients at Bio21 – Professors Andrew Holmes, Tony Bacic and Paul Mulvaney. Michael is a current

ARC Federation Fellow and Deputy Director, Biota Structural Biology Laboratory, St Vincent's Institute. [Read more](#)

Bio21 congratulates more award recipients. Institute members continue to be recognized for their work and achievements. Andrew Hill, Group Leader from the Department of Biochemistry and Molecular Biology was awarded the Australian Society of Biochemistry and Molecular Biology (ASBMB) 2010 Merck Research Excellence Medal (formerly Roche Medal) and Lin Wai Hung, Department of Pathology who was awarded an ASBMB Fellowship. The Merck Research Excellence Medal is awarded to an outstanding Australian biochemist or molecular biologist with less than 15 years postdoctoral experience. The Fellowships are awarded to early career researchers in recognition of their outstanding work in an area of biochemistry or molecular biology.



The annual Bio21 Institute Research Symposium was again hailed a success. A cornerstone event on the Institute calendar, the aim is to bring together our community of members to foster interactions, generate discussions and explore opportunities for potential interdisciplinary research and industry linkages. Discussion relating to a number of potential collaborations emerged from the event which is testimony to its importance and the ethos we have developed at Bio21. Organised by a dynamic group from the Bio21 RA and Postdoctoral Fellow (RAPD) Association and this year supported by event sponsors Sapphire Bioscience, GE, Sigma-Aldrich and Applied Biosystems/Invitrogen, the program included 22 oral and 37 poster presentations, trade displays and a networking event. (Photo Bio21 Institute 2010).

Dr Eric Hanssen joins the Institute as new Electron Microscopy Unit Manager. Eric Hanssen comes to us after 4 years at La Trobe University spent working on developing new whole cell imaging techniques (e.g. Structural Illumination, Electron and X-ray tomography), using the *Plasmodium* malaria parasite as a model. He also has experience with whole tissue or cell culture through different ongoing collaborations and from a “previous life” in the extracellular matrix field of research. Eric will manage the overall Unit and will be in charge of the TF30 cryo microscope which is one of five electron microscopes within the Institute’s Electron Microscopy Unit.

Read more about the [Electron Microscopy Unit](#) at the Institute. We also welcome enquiries about possible access.



German Delegation focus on solar cells research. A high-level German scientific delegation pursuing interests in Organic Photovoltaics was hosted by Professors Andrew Holmes (organic solar cells research), Paul Mulvaney (nanoscience research) and visiting Professor Peter Baeurle. The visit was organised in conjunction with the Australian Academy of Technological Sciences and Engineering and included briefings with researchers across the country. Professor Peter Baeurle, a Professor at Ulm University, is currently visiting the Institute, collaborating with Professor Holmes' group. He is visiting Australia as part of the Go8/Daad-Aust Germany Joint Research Cooperation Scheme. (Photo Bio21 Institute 2010).

International students explore Bio21. The Institute welcomed back Professor Sang-Ki Rhee who along with two fellow Professors and 40 undergraduate students, visited the Institute on an educational field trip to Australia. Sang-Ki held an Honorary appointment with Bio21 in 2009 and is now Dean College of Medical Sciences, Professor Department of Medical Biotechnology and Chief Executive Director SCH Center for BioPharmaceutical Research and Human Resources Development at the Soon Chun Hyang University. This is the second visit back to Bio21 by Sang-Ki in recent months. In November he was accompanied by 20 undergraduate students on a similar study tour.

A study tour of 27 Biomedical Engineering students from Eindhoven University of Technology in the Netherlands visited Bio21 to broaden their horizons about the work conducted by key institutions in Melbourne in the biomedicine field. The group was co-hosted by Dr Jitte Flapper, a postdoctoral fellow from Eindhoven University currently working as a postdoctoral fellow with the Holmes group at Bio21. Briefings included an insight into multidisciplinary projects such as Alzheimer’s research conducted by Dr Shayne Bellingham (Andrew Hill lab - Biochemistry and Molecular Biology), organic solar cells research conducted by Dr David Jones (Andrew Holmes group - Bio21/Chemistry) and a tour of the University based national infrastructure facility, Metabolomics Australia by Manager Dr Dedreja Tull. During their five day visit to Melbourne, the students also visited CSIRO, Howard Florey Institute and the Synchrotron.

Fourteen students from seven countries visited Bio21 to find out more about our research and capabilities. The visit was part of the Science Campus Tours for exchange and study abroad students held during the University of Melbourne’s Orientation week held each semester. Bio21 hosts included Lisa Smith, a postgraduate student with Paul Mulvaney’s nanoscience group, Eric Hanssen, our new Electron Microscopy Unit Manager and David Jones with the Andrew Holmes organic solar cells research group.



Science students visit Bio21. A group of students from Hawthorn Secondary College visited the Institute’s Nuclear Magnetic Resonance (NMR) facility. Hosted by Facility Manager, Dr David Keizer, the students were keen to find out more about the massive machines and their diverse research applications. NMR is a technique now covered in the science curriculum for Year 12 students. Tours of the facility provide a great opportunity to get up close in a high powered state of the art facility.

(Photo Bio21 Institute 2010).