



THE UNIVERSITY OF  
MELBOURNE



# MELBOURNE VENTURES

2010 Annual Review

# MELBOURNE VENTURES

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Melbourne Ventures provides the academic community of the University of Melbourne and its affiliate organisations with a comprehensive range of services that support research commercialisation and technology transfer.

## We offer the following services:

- Commercialisation advice
- Technology assessment
- Business development expertise
- Patent and trademark management
- Technology licensing
- Creation of start-up companies
- Attraction of investment capital

Welcome to the Annual Review of Melbourne Ventures' activities for 2010. As you'll read in the pages that follow, it has been a year in which we have once again been engaged at all stages of the commercialisation process, from educating researchers and promoting awareness of good intellectual property management at the start of research projects, through to our ongoing support for opportunities first identified many years ago (a good example of the latter being the biotech company Hatchtech about which we have included an update in this report). It is a well established fact that the journey from discovery to marketplace can be many years long, and it is tremendous to see a healthy flow of new technologies which are embarking on that journey, even as other technologies in our portfolio reach much more advanced stages of development.

I have written in previous years of the challenging market conditions that developed in the wake of the Global Financial Crisis, and our experience in 2010 has been that the effects of the crisis are lingering on in the early-stage capital markets, making it very

challenging to source investment for new technologies. In recognition of the lower deal flow in this area, we were regrettably forced during the year to wind down the activities of our New Ventures team who have been key contributors to our development over the past few years – we thank them all for their contribution.

On a more positive note, however, we have enjoyed considerable success engaging with industry partners to provide licenses or options over University technology, and with the growing trend toward open innovation we are confident this pattern will continue. Clients ranged from early-stage start-ups in our local area through to the largest multinational players in a wide range of fields. We look forward to working with these partners over the years ahead to make the most of the technologies they are developing.

Closer to home, 2010 saw the University undertake a substantial review of its activities across the full spectrum of commercialisation, as it seeks to capture ever higher levels of efficiency and effectiveness.

As a result of this review, Melbourne Ventures will become a division of its parent company, UoM Commercial Ltd, from the start of 2011. I am confident this will open up a new chapter in the development of our company, as we are able to provide a wider range of services to our faculty clients and capture some of the benefits of being part of a larger organization. I'm happy to say we will continue to use the Melbourne Ventures name, however, and we remain as committed as ever to excellence in technology commercialisation.

Navigating change, both in our internal and external environments, has been a feature of 2010, and I am sure it will continue to be a feature of 2011. I would like to take this opportunity to thank the University, and our Faculty and Graduate School clients, for their ongoing support of our activities in 2010 – we look forward to working with you in 2011. I'd also like to acknowledge the dedicated work of the whole Melbourne Ventures team, without whom the stories you read in the following pages would not be possible – it is a privilege to be part of a team with such



**Dr Charlie Day**  
Chief Executive Officer  
Melbourne Ventures

commitment to getting technology into the market for the betterment of our world.

For myself, 2011 will also be a year of change, as I take a year-long break from my leadership position in Ventures to work with the University on a range of innovation-related projects. I'm delighted to say that Jason Coonan will be taking over the reins from me at Ventures, and I am confident his leadership will take the company to even greater heights.

## Ventures CEO receives Vice Chancellor's Award

The broader impact of Melbourne Ventures' work with the University community was recognised in late 2010 with the presentation to CEO Charlie Day of the 2010 Vice-Chancellor's award for Exceptional Leadership and Vision.

The award was established to recognise exceptional contributions made by

professional staff towards fulfilling the goals, values and missions of the University.

Dr Day was nominated for the award by Professor Emeritus David Penington AC, the Chairman of Bionic Vision Australia (BVA) and by Professor Iven Mareels, the Dean of Engineering, for his work towards establishing BVA.

The citation for the award noted that "Dr Day provided outstanding leadership to the multidisciplinary University team

behind the historic \$42m Commonwealth Government award to the Bionic Vision Australia consortium. Dr Day demonstrated perseverance, commercial and innovation insight and great project coordination skills, as well as enormous amounts of diplomacy and tact, in shepherding a complex group of stakeholders through a difficult tender process. Without his contribution, the tender project is unlikely to have succeeded."

Senior Vice Principal Ian Marshman said it was important to recognise the work of the

professional staff who support academic endeavour, and contribute to the excellence the University seeks to achieve and invariably accomplishes. Charlie Day said he was honoured to receive the award, and was particularly pleased to see such strong endorsement for the contribution that commercialisation skills can offer to a leading university.

## The Shoe Does Fit



**Professor Kim Bennell**  
Department of Physiotherapy  
University of Melbourne



**Dr Andrew Leech**  
Business Development Associate  
Biotech and Life Sciences  
Melbourne Ventures

Taking technology commercialisation in its stride, 2010 saw Melbourne Ventures working closely with the University to close a Linkage and License Agreement with ASICS Oceania Pty Ltd for the intellectual property rights and clinical testing of an innovative shoe design for the reduction of osteoarthritis in the knee joint.

### The disease

Osteoarthritis of the knee is one of the most significant problems of modern society, and is not just limited to athletes, with one in two people experiencing it by the time they turn fifty. Knee osteoarthritis is important because it impacts significantly on the development and morbidity of other major health issues, due to the reduced mobility of the sufferer. Reduced mobility means a reduced ability to stay active, and this in turn has implications for diabetes, obesity, hypertension and cardiovascular disease.

### The Industry Partner

ASICS Oceania is a subsidiary of the global sporting goods giant ASICS, and shares its parent company's ethos of "Anima Sana In Corpore Sano", meaning a sound mind in a sound body. Having net sales totalling AU\$2.8 billion for the 2009 financial year, and having a brand synonymous with innovation and excellence in running shoes, ASICS was the logical choice for the University to partner with for development and commercialisation of the osteoarthritis shoe technology.

### The Technology

A team of Physiotherapists from the Centre for Health, Exercise and Sports Medicine (CHESM), including Dr Rana Hinman, Timothy Wrigley, and led by Professor Kim Bennell developed the concept of the shoe design while researching the causal factors of joint loading and medial compartment osteoarthritis in the knee. The result of their collaborative experience and efforts is a shoe that incorporates a unique combination of structural features that is specifically designed to reduce medial compartment load in the knee, thus relieving symptoms and slowing or stopping disease progression.

### The Pitch

Suspecting they were commercially on a sure footing with this idea, the researchers approached Mark Doherty of ASICS for support to develop, test and validate the shoe design. The decision to approach ASICS was an easy one for the University, with ASICS being a valuable industry partner which has previously supported several research projects within the University. With support from the Melbourne Research Office and Melbourne Ventures, the partnership between the University and ASICS was tailored to maximise the benefits of the Australian Research Council (ARC) Linkage Grant scheme, thus leveraging funding support for development of commercial technologies from the Australian government.



### The Deal

While Melbourne Ventures, led by Dr Andrew Leech, employed the twin guns of tact and diplomacy in negotiating a fair and equitable license to the technology with ASICS, the Physiotherapy research team, as part of the ARC Linkage Grant component of the deal, designed a comprehensive clinical trial to assess and validate the innovative design features of the shoe for decreasing loading and osteoarthritis in the knee joint. In addition to providing financial support, ASICS contributed the know-how and capability to manufacture the shoe, the cumulative result being an innovative shoe that could lessen the pain of knee osteoarthritis for millions of sufferers.

### The Rewards

With the clinical trial having started in June 2010, Mark Doherty from ASICS was hopeful to see the shoe on the market in the near future. This is welcome news to Melbourne Ventures, with the license component of the deal ensuring a royalty stream to the University, and the shoe offering the promise of pain free exercise to millions of knee osteoarthritis sufferers.

## Deal for next-generation optical telecommunications technology completed

In late 2010 Melbourne Ventures completed a transaction assigning a package of optical transmission technologies from the University to an emerging company in the exciting field of next generation optical networking.

The inventor of the technologies, Associate Professor Bill Shieh from the Department of Electrical and Electronic Engineering is enthusiastic about the uptake of the technology and by the prospect of collaborating with the adopting company.

The technologies revolve around Orthogonal Frequency Division Multiplexing (OFDM) optical modulation that allow optical networks to operate at 100 Gbit/s and beyond via simple and cost-effective upgrades to existing networks. Optical OFDM is also ideal for green-field optical network deployments. By way of comparison, existing networks operate at 40gbit/s, and existing modulation techniques are either not ideal or not workable at speeds faster than this.

Optical communication technologies are highly relevant because the Internet has become the prime source of telecommunication traffic; growth rates are exceeding 50% per year. The clear trend toward distribution of rich-media and video content will continue this growth. In order to meet the demand, telecommunications carriers have expressed strong interest in

transmission speeds of 100 Gbit/s, and in fact, significantly higher speeds. Thanks to this assignment agreement, Dr Shieh's technology can be part of a well resourced and concerted effort to win the race for addressing this need and pushing the boundary of optical transmission speeds.

Dr Shieh was awarded a grant from the Growing Innovation Fund to financially support the development of commercially relevant aspects of the technology.



**Associate Professor William Shieh**  
Electrical and Electronic Engineering  
University of Melbourne

## DSL power management technology acquired by leading industry vendor

Melbourne Ventures' Richard Day was delighted to complete the acquisition during 2010 of patented Digital Subscriber Line (DSL) power spectrum optimisation technology by a leading international telecommunications vendor.

The "SCALE & SCAPE" technologies were developed by Professor Jamie Evans and Dr John Papandriopoulos in the Department of Electrical and Electronic Engineering.

These two technologies allow the possibility of increased internet speeds from the existing installed copper twisted pair wiring in the analogue telephone network that is still used in many countries around the world. In these DSL networks, the twisted pairs are next to each other in large bundles and they interfere with each other, generating electromagnetic crosstalk. This electromagnetic crosstalk reduces the speed of the connection to well below its theoretical maximum.

Both SCALE & SCAPE use advanced optimisation techniques to find an optimal power spectrum that reduces this crosstalk, which allows each DSL connection to operate at far closer to its theoretical maximum.



**Professor Jamie Evans**  
Electrical and Electronic Engineering  
University of Melbourne



**Dr John Papandriopoulos**  
Electrical and Electronic Engineering  
University of Melbourne



**Dr Richard Day**  
Commercialisation Manager  
Physical & Information Sciences  
Melbourne Ventures

## Commercial partnership targets safer drug discovery

Drug discovery companies currently do not have the ability to perform drug metabolism studies on biopharmaceuticals, which is a serious issue in the clinical assessment of safety for new therapeutics. Leading the charge to correct this deficiency in the pharmaceutical development pipeline, scientists at the University of Melbourne, led by Associate Professor Tony Purcell, have invented a new technology using mass spectrometry to identify metabolites from complex biological samples.

The researchers affectionately refer to the technology as NIIPe, which stands for 15N Immonium Ion Precursor scanning. To help commercialise the technology, 2010 saw the University partner with AB SCIEX, with the goal of making the technology available to any scientist conducting these types of studies.

In essence, this is the pharmaceutical industry's first and only way to follow the



**Dr Nicholas Williamson  
& Associate Professor Anthony Purcell**  
University of Melbourne and  
Bio21 Institute - Mass Spectrometry

fate of the breakdown of protein-based drugs in vivo. This novel approach will help drug discovery scientists better determine the effectiveness and safety of peptide and protein therapeutic agents, such as vaccines, that are advanced through regulatory processes and ultimately sold on the consumer market.

In developing any technology through to a product, a key issue is making sure you are providing what the market wants. NIIPe is already well advanced in that sense, with large biopharmaceutical companies as well as pharmaceutical companies already providing positive feedback about the mass spectrometry-based approach. Further to this, the University and AB Sciex are ensuring that the new technology meets the evolving requirements for drug discovery and development, by continuously engaging with biopharmaceutical scientists around the world to obtain feedback, share scientific insight and refine the novel approach.

The collaboration between the University and AB Sciex is ongoing, with both partners realistically hopeful of seeing the NIIPe technology on the market in the near future.



**Dr Andrew Leech**  
Business Development Associate  
Biotech and Life Sciences  
Melbourne Ventures

## Novel antibody could lead to safer treatment of HIV

Improvements in the safety of an important treatment for HIV appear a step closer in 2010 after Melbourne Ventures assisted Professor James McCluskey, Head of the Department of Microbiology and Immunology in the Faculty of Medicine, with the successful commercialisation of a monoclonal antibody against HLA-B\*57.

This antibody has potential application for the screening of patients to be treated by abacavir, a commonly used nucleoside analogue with potent antiviral activity against HIV-1. Abacavir is marketed as a combination product by GlaxoSmithKline under the trade names of Epzicom/ Kivexa and has annual sales in excess of US\$850M per year. It is also marketed by generic Indian companies, Cipla Ltd, Curacion Pharma and Emcure Pharmaceuticals.

The main side effect of abacavir therapy is hypersensitivity, which can be severe, and in rare cases fatal. Symptoms include fever, skin rash, fatigue, gastrointestinal symptoms such as nausea, vomiting, diarrhoea or abdominal pain and respiratory symptoms such as pharyngitis, dyspnea, or cough. Because hypersensitivity to abacavir is strongly associated with the expression of HLA-B\*5701, the Food and Drug Administration (the US federal agency regulating the release of new foods and health-related products) now recommends for all patients to be screened for the HLA-B\*57 before starting treatment with abacavir or abacavir containing medications. Screening for HLA-B\*57 is currently done using genetic testing, but

the new antibody technology offers a faster alternative for this vital test.

Melbourne Ventures negotiated on behalf of the University an exclusive licence arrangement with a global medical technology company in relation to the sale of kits incorporating the monoclonal antibody developed by Prof. McCluskey and his team. In addition to an upfront payment, the University will be entitled to receiving development milestone payments and a share of revenues generated from the sales of products.



**Christophe Demaison**  
Snr Business Development Manager  
Biotech and Life Sciences  
Melbourne Ventures



**Professor James McCluskey**  
Head of Microbiology & Immunology  
University of Melbourne

## Gigabit Wireless: Setting the Standard for Tomorrow's Broadband

Melbourne Ventures was very pleased to support Professor Jamie Evans from the Department of Electrical and Electronic Engineering and his co-investigators in finalising the commercial aspects of a collaboration with NEC Australia under a significant new Linkage Project. This collaborative project between researchers at the University of Melbourne and NEC Australia will impact the future international standards for wireless broadband access. The research team will meet the challenge of designing an integrated wireless access technology that offers the maximum possible data rate for mobile users while providing competitive data rates for wireless access to the home. This will be achieved by exploiting a new wireless technology that provides a superior air interface to current generation systems architecture design that have the potential to drastically increase the capacity of wireless systems. On Melbourne Ventures' role, Professor Evans said "The support of Ivan Mellado from Melbourne Ventures was absolutely critical in the negotiations with NEC around IP that formed part of the Linkage Agreement".



**Professor Jamie Evans**  
Electrical and Electronic  
Engineering  
University of Melbourne



**Ivan Mellado**  
Snr Commercialisation  
Manager  
Physical & Info Sciences  
Melbourne Ventures

## Bio21 – a vibrant hub for commercially-oriented research

When Greg Pullen joined the Melbourne Ventures team in mid-2010, he brought with him considerable expertise from both the industry and the academic side of commercialisation. This expertise has been a valuable asset to Greg as he engages with the leading-edge research groups located within the Bio21 Institute.

For example, Greg has worked with researchers at the ARC Centre of Excellence for Free Radical Chemistry and Biotechnology, led by Professor Carl Schiesser to file two new provisional patents on technologies identified in 2009/2010.

The first technology involves a novel drug which has the potential to be developed into a combination therapy, offering proven blood pressure lowering activity combined with cardio-protective activity. It achieves this by attaching an anti-oxidant group to the main molecule. Greg and Sean Lumb have worked closely with the research team to develop an early-stage business plan for the technology and the project has been able to secure two grants of \$50,000 each from Bio21 and the University's Growing Innovation Fund. This funding will support further experiments that aim to demonstrate proof of concept in animal models. This would open the door to a collaboration agreement with a major pharmaceutical or biotechnology company.

The second technology involves a novel class of anti-oxidant molecules that may have applications as drugs or as a coating for coronary artery stents. This is an early-stage project, but one that shows good potential. Currently, animal data is being generated

by collaborators from the Heart Research Institute in Sydney.

Reflecting on his first few months with Melbourne Ventures, Greg commented that "I've only been here a short time but already I'm impressed by the strength and diversity I see at Bio21. The research leaders are genuinely interested in pursuing successful commercialisation, and indeed several have already travelled that path before, which is a tremendous advantage."

One such academic is Professor Andrew Holmes, who heads the Victorian Organic Solar Cell Consortium (VICOSC). Prof Holmes' group has recently received its second round of funding from the Victorian Government, and is well into its development phase for printing polymer-based solar cells directly onto steel roofing in collaboration with BlueScope Steel, one of the commercial entities in the consortium. The technological advances made by VICOSC will allow whole roofs to be coated with solar cells in a far more cost-effective and efficient manner than at present. A number of patents have also been filed by this group, which have been very active developing new technologies in the "clean tech" space. Prof Holmes and his team have quickly established themselves as major clients for Greg, who has already been able to support them by negotiating an agreement with Cornell University in the US to commercialise some earlier work by Professor Holmes and his collaborators.



**Professor Carl Schiesser**  
ARC Centre for Free Radical  
Chemistry and Biotechnology  
University of Melbourne and Bio21 Institute



**Dr Greg Pullen**  
Business Development Manager  
Chemical & Material Sciences and Bio Engineering  
Melbourne Ventures



**Professor Andrew Holmes**  
Victorian Organic Solar Cell Consortium  
School of Chemistry  
University of Melbourne and Bio21 Institute

## Otifex Therapeutics



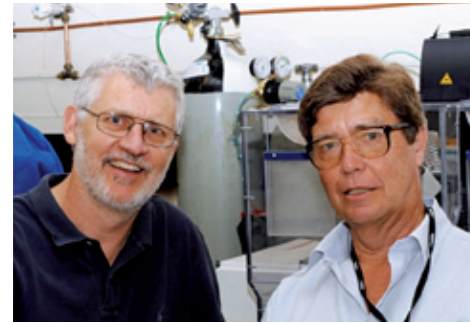
**Christophe Demaison**  
Snr Business Development Manager  
Biotech and Life Sciences  
Melbourne Ventures



**Dr Lewis Schulz**  
New Ventures Manager  
Melbourne Ventures

2010 was a year of rapid and substantial development for Otifex Therapeutics, a start-up company established in 2009 to pursue a new use for a well-known drug. The company's technology is based on betahistine's ability to improve middle ear ventilation by facilitating the opening of the eustachian tube. This previously unknown property was discovered by Associate Professors Burkhard Franz and Colin Anderson from the Department of Anatomy and Cell Biology at the Faculty of Medicine, Dentistry and Health Sciences (MDHS). As a clinician, A/Prof Franz developed an interest in the role of middle ear – inner ear pressure relationships in inner ear disorders, and in collaboration with A/Prof Anderson was able to show that topical application of betahistine significantly improves eustachian tube function.

This result suggested that the drug could have application for the treatment of diseases in which eustachian tube dysfunction represents the primary underlying pathological mechanism. Most common by far is childhood Otitis Media with Effusion (OME) in which serous fluid accumulates in the middle ear. Whilst it may occur in both adults and children, OME is of particular concern in children as it can result in hearing impairment and consequential adverse effects on language development. Unfortunately, there is currently no pharmacological therapy that has been clinically proven to have long-term benefit. Published epidemiological data suggest that in the USA there are between 4.4 and



**Associate Professors  
Colin Anderson & Burkhard Franz**  
Department of Anatomy and Cell Biology  
University of Melbourne

5.4 million diagnosed episodes of OME per annum in the paediatric population. OME is the most common reason for referral for surgery in children, the procedure of tympanostomy involving the insertion of grommets into the eardrum to alleviate the presence of middle ear fluid.

Orally-dosed betahistine is already approved and marketed by Abbott Laboratories in approximately 80 countries for use in vestibular disorders such as Meniere's Disease. This encouraged the Melbourne Ventures team to explore progressing the drug very rapidly to a proof-of-concept clinical trial in patients with OME. A business and development proposal was put together under the leadership of Lewis Schulz, New Ventures Manager and Christophe Demaison, Senior Business Development Manager at Melbourne Ventures.

At the same time, Lewis worked with the University's inventors to further elucidate the mechanism of action of betahistine on the eustachian tube function using funding from the University's Growing Innovation Fund program, and also coordinated the development and testing of a prototype product. Further market studies were undertaken with the support of a COMET grant from the Federal Government.

An important relationship for Otifex Therapeutics was established with Associate Professor Noel Cranswick, Director of Clinical Pharmacology and the Australian Paediatric Pharmacology Research Unit at the Murdoch Children's Research Institute and Royal Children's Hospital. A/Prof Cranswick will assist with the design and implementation of the clinical program.

This intensive work on both the technical and commercial aspects of the opportunity culminated in late 2010 in a substantial investment in Otifex Therapeutics by both Uniseed and Brandon Capital Partners (through its Medical Research Commercialisation Fund).

Otifex Therapeutics is now looking forward to progressing this product into the clinic.

## Internet content distribution set to become more accessible

Businesses that rely on the Internet to deliver content such as audio and video to users often turn to specialist Content Delivery Networks (CDNs) to provide the specialised technology required. CDNs first emerged in 1998 to improve the distribution of media-rich content quickly and with high reliability. However, far from democratising the delivery of content, the most pervasive CDN providers are priced out of the reach of most small to medium-sized enterprises (SMEs), start-ups, government agencies, universities, and charities. Dr James Broberg from the Department of Computer Science and Software Engineering at the University of Melbourne is aiming to provide a more widely accessible content delivery platform through the commercialisation of his technology arising from his research that he calls "MetaCDN".

MetaCDN is built upon rock-solid "cloud" infrastructure now widely available from Amazon, Microsoft, Nirvanix, Rackspace, Google and others. MetaCDN's patent-pending "Cloud CDN Overlay" reduces congestion and downtime and drastically improves access speeds, maximising user experience and satisfaction. Thanks to its sophisticated "on-demand" use of commercial Cloud Storage resources, MetaCDN will provide a readily accessible, highly featured, enterprise class CDN service at competitive pricing and with flexible contract terms.

Dr Broberg commented "I'm excited that this technology will give small and medium sized businesses access to a high quality and affordably priced CDN, so that they can provide their clients with a high quality experience. It's really frustrating for end-users to have to wait for a video to download, it drives them away. Companies of this type haven't had the ability to control the presentation and delivery of their video content, such as maintaining their corporate branding effectively on videos, and delivering video in a manner that is independent of the viewing device and the connection speed. MetaCDN will change this".

Melbourne Ventures' Richard Day and Ivan Mellado worked closely with Dr Broberg during 2010 to develop and execute an appropriate commercialisation strategy. Whilst MetaCDN can deliver all types of electronic content, it became obvious that the most suitable market opportunity for the MetaCDN technology is companies that have a need to distribute rich and large content such as video. Examples of these kinds of organisations include Creative Media Agencies delivering advertising, Government Departments and Training providers. Richard Day commented that "it's been very positive that we've had several companies from these market segments approach us wanting to trial the MetaCDN service because their current solution doesn't meet their needs". Melbourne Ventures researched and

developed a business plan for a new start-up company to drive the commercialisation of MetaCDN, and a patent application has been filed to protect key aspects of the technology which underlies the MetaCDN approach to content distribution. Financial support for the commercial development of the technology has been received from both the University's Growing Innovation Fund (GIF) and from the Federal Government's Commercialisation Australia program, in the form of a Skills & Knowledge grant. Melbourne Ventures is now facilitating engagement with a range of potential commercial investors.

Dr Broberg commented that "this project wouldn't have progressed without the expertise and commitment of the project team at Melbourne Ventures and the grant from the GIF to advance the technology in a manner that can't be done with research monies. The customer trials that are required to obtain investment for the company would not be possible without GIF funds." With commitment and strategic support from Dr Broberg, the Department of Computer Science and Software Engineering and the Melbourne School of Engineering, MetaCDN represents a compelling business opportunity which is already well positioned for rapid and exciting growth during 2011.



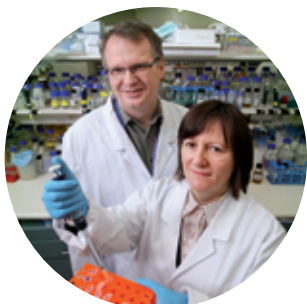
**Dr James Broberg**  
Department of Computer Science  
and Software Engineering



**Dr Richard Day**  
Commercialisation Manager  
Physical & Information Sciences  
Melbourne Ventures



**Ivan Mellado**  
Snr Commercialisation Manager  
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**Dr Brian Smith** Walter and Eliza Hall Institute  
and **Dr Genevieve Evin** Department of  
Pathology University of Melbourne



**Dr Simon Wilkins**  
Business Development Associate  
Biotech and Life Sciences  
Melbourne Ventures



**Christophe Demaison**  
Snr Business Development Manager  
Biotech and Life Sciences  
Melbourne Ventures

## BACE Therapeutics highlights the power of the Parkville Precinct

Early in 2010, Melbourne Ventures and the Walter and Eliza Hall Institute (WEHI) celebrated the successful culmination of a close collaboration to secure funding from the Medical Research Commercialisation Fund (MRCF) for BACE Therapeutics, a start-up company which is developing new treatments for Alzheimer's disease.

Alzheimer's disease is the most common form of dementia in the elderly and affects more than 18 million people worldwide. Although therapies exist that can ease symptoms of the disease, there is an unmet need for treatments that can slow or stop its progression.

The global market for Alzheimer's therapeutics is growing at around 13 per cent each year and was estimated to be worth \$7.2 billion in 2010.

As its name suggests, BACE Therapeutics was established to develop novel drugs that inhibit beta-secretase (also known as BACE1), a key enzyme in the pathogenesis of Alzheimer's disease. The company builds on research and IP from a collaboration between Parkville-precinct neighbours WEHI, the University of Melbourne, and the Mental Health Research Institute of Victoria (MHRI), and is a good example of the power of the precinct working together.

This collaboration began when Dr Brian Smith, from WEHI (pictured top left), discovered two compounds that bind to BACE1 and teamed up with Drs Genevieve Evin (also pictured top left), Kevin Barnham and Vijaya Kenche from the University of Melbourne to investigate the properties of these compounds in state of the art biological assays.

Dr Evin from the Department of Pathology, was the first researcher in the world to demonstrate that BACE1 is increased in the brain cortex of Alzheimer's patients. As part of this collaboration, Dr Evin has shown that the two compounds identified by Dr Smith are effective at inhibiting BACE1. Work is now ongoing to develop potent lead candidates that can be taken through pre-clinical development.

The close research collaboration which led to the discovery of the technology has continued in the commercialisation phase, with Melbourne Ventures assisting BACE Therapeutics to achieve its development milestones through Christophe Demaison's involvement as a non-executive Director on the Board of the company, and Simon Wilkins' role as the University's representative on the company's research progress committee.

## Manjrasoft brings cloud computing down to earth



In late 2010 Manjrasoft secured an investment of \$750,000 from Uniseed to further progress its commercialisation plan and accelerate promising early sales achievements. Manjrasoft is a start-up company focussed on developing cloud computing technologies that enable computationally intensive processing tasks to be dynamically distributed across many processors within private or public cloud networks. The software was developed in the Grid Computing and Distributed Systems laboratory (in the Department of Computer Science and Software Engineering) under the leadership of Professor Raj Buyya. Manjrasoft's core "Aneka" technology enables the performance and scalability of existing Windows based software applications to be improved, and development frameworks extend abilities for the peering of cloud computing across networks. Melbourne Ventures has worked with Prof Buyya over several years to implement an IP strategy, and led the initial business planning, business establishment and capital raising process, including securing a COMET grant from AusIndustry to support the early planning phase.



**Professor Raj Buyya**  
Computer Science  
and Software Engineering  
University of Melbourne



**Ivan Mellado**  
Snr Commercialisation  
Manager  
Physical & Info Sciences  
Melbourne Ventures

## GIF

### Growing Innovation Fund

Successful university technology transfer involves the movement of ideas from the lab to the marketplace. One of the most critical steps is the 'proof of concept' or 'proof of commercial viability' stage, when the concept is proved viable for commercial markets, commercial applications are refined, and the scales of potential markets are determined. Sources of funding to progress an opportunity across this gap are scarce and this gap is often colloquially referred to as the "Valley of Death".

To partially address this growing gap, Melbourne Ventures launched in 2008 the GIF, a two-year pilot program designed to provide proof of concept funding for promising commercialisation opportunities disclosed to Melbourne Ventures by University researchers. The program was funded through a far-sighted award generously provided by the A. E. Rowden White Foundation, matched by a reinvestment of commercialisation proceeds from the University.

During the two year program, nine investments were made in projects arising from the Faculty of Medicine, Dentistry and Health Sciences (5), the Faculty of Science (1), and the School of Engineering (3). Of the nine projects funded, five have achieved commercially relevant outcomes, characterised by securing additional external investment in the opportunity, spinning out into a new company, or securing a commercial transaction with a development partner.

## New venture explores frontiers of personalised medicine

Senior lecturer Dr Paul Donnelly and his research team from the School of Chemistry situated in the Bio21 Institute have developed new radiopharmaceutical compounds that could significantly improve the accuracy of PET imaging and can also be tailored to target specific disease sites to provide on-going disease monitoring.

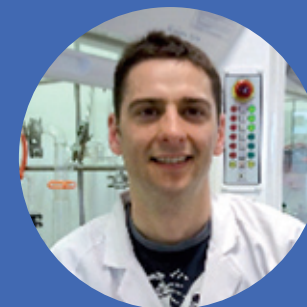
2010 saw a new start-up company, Clarity Pharmaceuticals Pty Ltd secure licenses from the University of Melbourne through its commercialisation company, Melbourne Ventures, to the intellectual property underpinning Dr Donnelly's technology. The company has also in-licensed a complementary PET technology developed by Senior Fellow Dr Suzanne Smith at the Australian Nuclear Science and Technology Organisation (ANSTO) with researchers at the Australian National University. The company will facilitate a strong collaboration between the University of Melbourne and ANSTO with a focus towards realising the development of clinical PET diagnostics and targeted radiotherapeutics allowing the accurate diagnosis and treatment of certain diseases.

Current imaging techniques such as X-ray and MRI provide information on anatomy and structure, whereas PET imaging can provide real time information on metabolic processes such as heart and brain function due to the mobility of radiopharmaceuticals through the body.

"These agents are targeted to selectively illuminate diseased tissue. The new compounds have the potential to provide clinicians with valuable diagnostic information to guide and improve treatment regimes," said Dr Paul Donnelly.

For example, unlike some current treatments for cancer in which patients are subjected to the overwhelming side effects of chemotherapy, Clarity's clinical products will provide targeted diagnosis, treatment and prognosis, ideally reducing treatment and recovery time for patients, and collaterally reducing the burden on our already overloaded healthcare system.

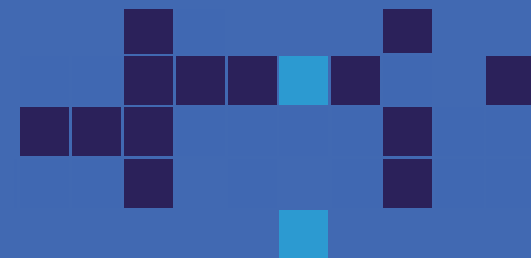
Managing Director of Clarity Dr Matt Harris says "Clarity is focused on the next generation of radiopharmaceuticals and aims to provide better patient outcomes. In an era of personalised medicine, we can utilise PET imaging to determine if an individual is responding to therapy and if not, move to an alternate therapy before it is too late, or alter dose to mitigate side effects".



**Dr Paul Donnelly**  
School of Chemistry  
University of Melbourne



**Dr Sabina Zahirovic**  
Business Development Associate  
Chemical and Material Science  
and Bio Engineering  
Melbourne Ventures





**Dr Sean Lumb**  
Snr Business Development  
Chemical and Material Sciences  
& Bio Engineering  
Melbourne Ventures



**Dr Paul Donnelly**  
School of Chemistry  
University of Melbourne



**Dr Anthony White**  
Department of Pathology  
University of Melbourne



**Associate Professor Kevin Barnham**  
Department of Pathology  
University of Melbourne

## Procypra Therapeutics targets neurodegeneration

Feedback from presentations to the investor community both here and overseas in 2010 suggests that Procypra Therapeutics has a busy year ahead in 2011. The company, which was established by Melbourne Ventures in 2009, is developing drugs for ALS (Lou Gehrig's Disease), Parkinson's disease, and a host of other neurodegenerative diseases, based on IP developed by a world-class team of researchers based at the Bio21 Institute, School of Chemistry and Department of Pathology.

Melbourne Ventures' Sean Lumb, who is leading the commercial development of the program, says that his consultations with industry experts, combined with internal business planning, suggests that the lead compound could commence human clinical trials in 2-3 years. If proven clinically, these drugs could halt disease progression and improve the quality of life and extend the lifespan of people suffering these diseases around the world.

Even at this early stage, the researchers have shown in multiple animal models of these diseases that the lead compound extends lifespan and inhibits the behavioural and neural degeneration which is characteristic of disease progression. These agents act via an exciting novel mechanism of action which may in turn form a platform from which a number of therapeutics may be developed across a range of neurodegenerative diseases.

## Harmonix Instruments bangs its drum

In one of Melbourne Ventures more unusual projects, Harmonix Instruments was created in April 2010 by Associate Professor Neil McLachlan of the Department of Psychological Sciences to commercialise a unique invention created in part during his work at the University of Melbourne.

Using finite element analysis, a technique commonly employed in mechanical and civil engineering to inform design, Dr McLachlan has invented an ensemble of harmonically tuned percussion instruments (xylophones, bells, and gongs) whose overtones are harmonically in tune with their fundamental tone. This unprecedented development permits the production of percussion instruments with pure harmonic tones and allows the instruments to be played in an ensemble fashion, which to date has been impossible with conventional percussion instruments. This invention marries the simplicity of struck percussion instruments with the beauty and harmony of traditional tuned ensemble music making.

In addition to the manufacture of harmonically tuned percussion instruments, Harmonix is designing curriculum materials and a new paradigm in music education for roll-out to educational and community music making markets.

Melbourne Ventures has assisted Associate Professor McLachlan with starting up the company and securing an AusIndustry COMET Grant, which is being used to validate the business opportunity



**Associate Professor Neil McLachlan**  
School of Psychological Sciences  
Melbourne Centre for Music  
University of Melbourne  
Photo: Dave Tacon

and formulate a commercialisation strategy. Melbourne Ventures will also assist in the creation of a business plan and marketing documentation which will be required to secure investment in the opportunity. Harmonix anticipates introducing its first line of ensemble instruments for the educational market in early 2012.

### NEWS FLASH

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"BBC and Lonely Planet have voted the Federation Bells created by Associate Professor Neil McLachlan in the top ten public art installations in the world, alongside other works such as the Statue of Liberty and Mount Rushmore in the US"



## Hatchtech Completes \$6.3m Fund Raising

The team at Hatchtech Pty Ltd was justifiably proud to close a \$6.3m fundraising in October 2010, one of the largest private capital raising events in the Australian biotech sector for 2010. The investment round attracted a number of Hatchtech's existing investors, including The University of Melbourne through its Endowment Trust, as well as a new investor, One Ventures Innovation Fund. The company's founder and Chief Scientist, Associate Professor Vern Bowles said that closing this funding round had been very challenging as the effects of the global financial crisis were still very apparent within this sector. "The fact that Hatchtech has managed to secure this investment was very satisfying and showed the investors belief in the company's technology", said Dr Bowles.



**Dr Lewis Schulz**  
Manager of New Ventures  
Melbourne Ventures

The fund raising comes on the back of Hatchtech completing a Phase 2a study earlier this year. "This study demonstrated that Hatchtech's lead product DeOvo™ was safe and well tolerated, and has both ovidical and lousicidal activity, said Hatchtech's Chief Operating Officer, Dr Lewis Schulz.

"These results will be used to support further discussions with the US Food and Drug Administration (FDA) and for the conduct of a larger clinical trial in the target population as well as supporting non clinical studies that are required prior to Phase 3" said Dr Schulz.

DeOvo™ is a pediculicidal treatment for head lice that promises to radically change the standard of treatment for this common parasite. "Current product options are both time consuming and cumbersome, and involve treating infested patients with two applications, typically 7-10 days apart", said Dr Bowles. DeOvo™ offers the hope of a simple and convenient solution to this problem, which will clear a head lice infestation with a single short application."



## Fibrotech

Fibrotech was established in 2006 to commercialise a drug candidate for the treatment of fibrotic conditions. The Medical Research Commercialisation Fund and Uniseed agreed to invest up to \$3 million in 2008 to bring the drug candidate, FT-11, to commercial reality. Fibrosis – the irreversible scarring of organs – underpins many major

killers such as kidney disease, heart failure, diabetes and lung and liver problems. Fibrotic conditions are responsible for up to 45 per cent of all deaths in the Western world. Preclinical development of FT-11 is being undertaken in collaboration with the National Institutes of Health in the US in preparation for testing FT-11 in human clinical trials for the treatment of diabetic nephropathy. Diabetic nephropathy is a condition which causes scarring and eventual death of the kidneys in diabetics which can lead to a lifetime of dialysis. The company is also exploring other therapeutic applications for its anti-fibrotic compounds.

## Neuprotect stays on target

2010 saw Melbourne Ventures' Grant McLachlan continue to provide expert management skills to Neuprotect, which is developing lead cardioprotectant and neuroprotectant small molecules to reduce tissue damage following a heart attack or stroke. In 2011 a further \$2M - \$3M capital raising is in progress to develop the opportunity.



**Dr Grant McLachlan**  
Project Manager New Ventures  
Melbourne Ventures



**Grant Morley**  
Project Manager New Ventures  
Melbourne Ventures

## Velacor

2010 saw Melbourne Ventures' Grant Morley continue to provide expert support to Velacor Therapeutics, which is developing a novel treatment for neurological conditions such as Alzheimer's Disease. Velacor has developed strong preclinical data in Alzheimer's which continues to be developed and intends to commence a full clinical trial in 2011. In October 2010 the company raised a significant round of new funding from current investors and is canvassing further capital investment from additional new investors.

## Engaging communities of innovators

Melbourne Ventures was pleased to again support the ICT for Life Sciences Forum in 2010. In its second year, the Forum is an important network that connects Melbourne researchers working at the intersection of biology, computing and engineering. Over 3,000 people attended Forum events during the year, including lectures on the brain, sequencing and cancer and retinal implants. The Forum's major annual event, The Graeme Clark Oration, featured genomics pioneer, Dr J Craig Venter, who attracted an audience of 2,000 at the free public lecture.

By supporting the Forum, Melbourne Ventures is delighted to be raising the profile of successful innovators in this fertile area of technology – and potentially uncovering the University's next Graeme Clark.



**Dr Graeme Clark**  
Bionic Ear  
Pioneer of the Multi-channel Cochlear Implant for severe-to-profound deafness

**Dr Craig Venter**  
J Craig Venter Institute  
Pioneer in genomic research

## Engaging international markets

The business of biotechnology is intrinsically global, and so taking the University's best biotechnology innovations to market requires Melbourne Ventures to maintain a global presence. 2010 was no different in this regard, with major trips undertaken to leading business development conferences in both the US and Europe.

In May, three Ventures team members attended the BIO International Convention in Chicago, the world's largest annual event for the biotechnology industry. The past two years have seen consolidation of the biotech industry through the fiscally tough period of the GFC, but the vibe of this year's convention was generally optimistic as the industry looks to rebound. Melbourne Ventures was able to secure over 50 partnering sessions, establishing new relationships with a range of companies which will both provide new deal opportunities as well as guidance for future research activities.

In November, representatives of the business development team travelled to Munich, Germany to attend Bio-Europe 2010. Over two and half days, they held about 30 one-to-one meetings with potential partners to discuss University-developed technologies and fee-for-service testing capabilities. In addition to the partnering meetings, the team also took the opportunity to attend workshops on topics ranging from "The life science industry in China" to "Personalised medicine and targeted therapies".

## Engaging local industry

In October, Melbourne Ventures was able to assist the Industry Advisory Group (IAG) of the Faculty of Science as it launched a new initiative to promote engagement between the Faculty and Industry.

With content developed in close partnership with Melbourne Ventures, the inaugural Faculty of Science "Downtown Seminar" was sponsored by leading professional services firms KPMG and Davies Collison Cave. Presentations focused on two successful commercialisation case studies involving researchers from the Faculty, with introductions from the event's MC, James O'Loughlin of the ABC's New Inventors program.

First-hand accounts of commercialisation of technologies ranging from analysing ancient rocks to curing the diseases of affluence gave the audience much food for thought, and the discussion and debate at the drinks afterwards was suitably vigorous.

The case studies highlighted the importance of strong relationships to innovation, and there were potent reminders of the time required to develop such relationships. The case studies also highlighted the many benefits to be gained by those both inside and outside the University from such relationships, and Melbourne Ventures looks forward to continuing to work with the IAG to promote effective engagement of this type.

## Engaging the next generation

Melbourne Ventures has been a proud sponsor of Endeavour, the School of Engineering's final year project program, since 2005 and in recent years, Griffith Hack, Patent and Trademark Attorneys have shared our vision and joined as sponsors of the Commercialisation Award.

This year Melbourne Ventures and Griffith Hack increased their involvement by running two commercialisation seminars, where students could meet the Judges and learn how to prepare for journey of commercialisation. The teams then completed Application forms to enter into the running for the Commercialisation Award and from this select group, our winners were chosen.

Congratulations to the two winning teams of the Commercialisation Award.

### Pressure Cast (PCAST)



Students: Bennett Qing Xian Chang, Jian Ming Chan, Jason Kia Qing Chew with Supervisor: Dr Peter Lee and Sponsors: Richard Day (Melbourne Ventures) and Nick Mountford (Griffith Hack)

### WIFI ON METRO



From left to right, Richard Day from Melbourne Ventures with Luke Graham (Student) and Chris Yeung (Student) and Nick Mountford from Griffith Hack

Top row from left:  
 Sean Lumb, Andrew Leech,  
 Grant McLachlan, Simone Quin,  
 Greg Pullen, Charles Day,  
 Priscilla Mellado, Sabina Zahirovic,  
 Christophe Demaison, Ivan Mellado

Front row from left:  
 Shirley Zapata, Jason Coonan,  
 Roberta Stead, Brenda Skeyhill,  
 Simon Wilkins, Ruth Park-Jones

Absent: Lewis Shulz and Richard Day



## Organisational Chart 2011

**Business Development Team**  
 Physical and Information Sciences  
 Ivan Mellado, *Snr Comm Mngr*  
 Richard Day, *Comm Mngr*

**Biotech and Life Sciences**  
 Christophe Demaison, *Snr BDM*  
 Andrew Leech, *BD Assoc*  
 Ruth Park, *BD Assoc*  
 Simon Wilkins, *BD Assoc*

**Chemical & Material Sciences  
 & Bio-Engineering**  
 Sean Lumb, *Snr BDM*  
 Greg Pullen, *BDM*  
 Sabina Zahirovic, *BD Assoc*

- Liaison with research groups
- Invention Disclosure review
- Technology assessment
- Commercialisation strategy
- Business case development
- Deal sourcing and negotiation

**General Manager, Melbourne Ventures  
 Deputy CEO, UoM Commercial Ltd**

Jason Coonan (2011)

**Asset Management Group**

Jason Coonan, *IP Manager*  
 Roberta Stead, *IP Administrator*  
 Brenda Skeyhill, *IP Administrative Assistant*  
 Simone Quinn, *Manager Equity Holdings*

- Patentability assessment
- Managing patent drafting & filing
- Managing the patent process
- Royalty management

**Marketing**

Priscilla Mellado, *Marketing Manager*  
 Shirley Zapata, *Marketing Assistant*

**New Venture Support**

Lewis Shulz, *Project Manager*  
 Grant McLachlan, *Project Manager*

- Start-up management support
- Project management
- Commercialisation grant writing

