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uniken

Working
together
for real
change

UNSW's industry
partnerships

UNSW

MEET MERYL TANKARD; THE CHALLENGES OF NEW MEDIA; CREATING A BIONIC EYE

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Five minutes with ...

Di Quick is the Design Manager at UNSW Press where she has spent the last 25 years working on some of Australia's favourite books.

What do you love about designing books?

I'm exceedingly lucky to be paid to do something I love. The birth of a book, from manuscript to object, continues to be an exciting and rewarding process. Adding value to the content by giving visual credibility to words and images, without overpowering the content, and while achieving a good balance in order to engage a book buyer is a really addictive job.

While the reader will ultimately read the words in a book, the book designer must read between them in order to tease out a way to best give it life. Form, line, colour, texture, shape, words, meanings, I am constantly thinking about how these things work, and how they can be put together. Every new manuscript provides a new challenge. Over the years the Press has published work in many areas and as a designer I have embraced each new work (except perhaps one). So a book designer ends up knowing a little bit about a helluva lot of interesting subject matter, especially at UNSW Press.

What's changed in the world of books in the last 25 years?

I've designed more than 1500 books and the book as an object hasn't changed much, but computers have changed the industry completely.

Do you have a favourite book you have worked on?

Many, but a few stand out. *The Flora of NSW* four-volume set, with around 13,000 illustrations and more than 1,000,000 words would have been overwhelming if not spread over a 10-year period. Working closely with Gwen Harden at the Sydney Botanic Gardens was a great experience, much bigger than a book.

There are many others. But books are generally written by passionate people, and a large part of the experience of being involved in a book is that of navigating a path between those involved. People all have different opinions about good and bad design.

What do you read for pleasure?

Art books, although I don't actually "read" them as much as visually eat them. I mentally collect pictures, all kinds, the more diverse the better. I keep files too, some tidily archived on the computer and some not. Apart from a few UNSW Press books that I always read in manuscript form prior to editing (I've never read a UNSW book in finished book form), my reading choices are quite diverse. I really enjoy popular science and ideas. I don't read much fiction, but at the moment I'm really enjoying rereading *One Flew over the Cuckoo's Nest*. It's funny, and comes highly recommended now that I've finished high school.

What's the best thing about working at UNSW Press?

I turn on the radio on the way to or from work and hear discussion about the work I've designed, often on the cutting edge of the national debate. The Press is a small crew but a great team of like-minded secular people and it's a family-friendly environment, very near to my pool! ■

Di was one of the UNSW Press team who worked on Tom Griffith's book, *Slicing the Silence*, which was recently awarded the Douglas Stewart Prize for Non-Fiction at the NSW Premier's Literary Awards.



Photo courtesy of Di Quick

Citations galore

UNSW is cementing its reputation as one of Australia's leading research universities, with a 25-year analysis showing a dramatic increase in publications and citations. The analysis from global research and development scrutineers *Thomson Scientific* shows that UNSW is one of the top three institutions in the country, in terms of leading in particular fields, with the University dominating in mathematics, psychiatry and psychology. The top three institutions were the University of Sydney, UNSW and the University of Melbourne respectively.

"This is a great result, standing us in good stead to meet UNSW's aspiration of being in the top three research institutions in the country and a leading player in the Asia-Pacific region," said Professor Les Field, the Deputy Vice-Chancellor (Research).

For he's a literary fellow

Award-winning Australian theatre and film writer Stephen Sewell has been awarded the UNSW Literary Fellowship.

Stephen will be working with the iCinema team in the Faculty of Arts and Social Sciences and COFA on a screenplay called *Scenario?*, which allows the audience to interact with the humanoid characters that are projected onto the panoramic screen that surrounds the audience.

He is also working on *Triage*, a short film project which is part of iCinema's *Slipstream* DVD series.

In addition to his writing and research, Stephen will run writing classes for both post-graduate and undergraduate students while at UNSW.

Unlocking brain cancer

UNSW and the Cure for Life Foundation are tackling the rising incidence of brain cancer by establishing a research facility in neuro-oncology.

Two million dollars will be spent over the next five years to establish a Chair in neuro-oncology and strengthen research in the field at the new Lowy Cancer Research Centre at UNSW.

"We are proud that the Cure for Life Foundation will become an integral part of the research team here at UNSW," says Professor Peter Smith, Dean of UNSW's Faculty of Medicine. "Initially the research will focus on brain tumour causes and treatment, with a particular emphasis on Glioblastoma Multiforme, one of the most aggressive brain tumour cancers."

The Lowy Cancer Research Centre will be an Australian first, bringing together childhood and adult cancer research at one site. Construction of the \$100 million-plus facility is now underway, with the Centre to be completed by late 2009.

Twenty-three-year-old Nikki Bart, a student in the Faculty of Medicine, stands on the summit of Mount Everest after she, and her mother Cheryl Bart, who is an alumnus of UNSW, climbed into the record books becoming the first mother and daughter team to scale the world's highest peak.

Photo courtesy of Nikki Bart and Bigpond



How to ... avoid the flu

Ever wondered why some people sail through winter without getting sick while others seem to always have the sniffles? Professor Nicholas Zwar from the School of Public Health and Community Medicine has some tips for staying healthy this year.

- 1** Understand the difference between the common cold and influenza. Common cold can be caused by a number of viruses while influenza is a specific virus with more severe symptoms including high fever, chills, muscle ache and cough. Influenza can be complicated by pneumonia especially in older people and those with chronic illness.
- 2** Wash your hands, especially before eating or touching your face, as respiratory viruses often spread hand to mouth after the hands have become contaminated. If you have kids encourage them to do the same.
- 3** Try to avoid people coughing or sneezing on you.
- 4** If possible avoid enclosed crowded places with exposure to lots of people.
- 5** Get adequate rest and eat a healthy diet as this helps your immunity.
- 6** Considered an influenza vaccination.

For the record

"Others of the big four will be peeved." Professor Ross Buckley reflecting on the proposed merger of Westpac and St George - Canberra Times.

"... anyone who disagrees with claims that paedophilic images are proliferating before our eyes is open to the charge of paedophilia themselves." Professor Catharine Lumby commenting on the furore surrounding Bill Henson's photographs of young, naked girls - Sunday Age.

"It's more fun to be talking and reading to kids than to be schlepping them around ..." Dr Lyn Craig on why Australian fathers spend less time caring for their children than their counterparts in Denmark, France and the US - Sunday Telegraph.

"... if we can predict the weather why can't we predict earthquakes? It's much more complicated, but it's do-able." Dr Linlin Ge, who is working to develop technology that will enable the prediction of earthquakes - Sydney Morning Herald.

"They shouldn't panic and think 'I'm going to get cancer' just because they have periodontal disease." Professor David Goldstein on a new finding that people with gum disease are at greater risk of a number of forms of cancer - The Australian.

Federation Fellowship trifecta



Jolly good fellows ... Brett Neilan



Michelle Simmons



Aibing Yu

Three UNSW academics have been named 2008 Australian Research Council Federation Fellows by Prime Minister Kevin Rudd and the Minister for Innovation, Industry, Science and Research, Senator Kim Carr.

The naming of Professors Brett Neilan, Michelle Simmons and Aibing Yu sees UNSW receive more Federation Fellowships than any other Australian research institution.

The trio are among 14 outstanding academics, selected from a highly competitive field of candidates, who will share \$23 million over the next five years to advance Australian research and innovation. The ARC Federation Fellowships scheme supports excellence in research by attracting world-class research leaders to key positions in Australia.

Deputy Vice-Chancellor (Research), Professor Les Field, offered his congratulations to UNSW's three new Federation Fellows: "Professor Brett Neilan is an outstanding molecular biologist and a world expert in the study of toxic cyanobacteria, which is increasing in frequency, global distribution and human intoxication. Toxic cyanobacteria form

harmful blue-green algal blooms in rivers and reservoirs.

"Under this Fellowship, Professor Neilan plans to fully characterise the genetic and biochemical basis of toxin biosynthesis and its regulation in cyanobacteria. This research will provide new understanding of both the factors that affect drinking-water quality and the future of novel pharmaceuticals, including antibiotics, anaesthetics and immunosuppressants."

Professor Michelle Simmons, receiving her second Federation Fellowship, is Director and Program Manager of the Atomic Fabrication Facility at UNSW and ARC Centre of Excellence for Quantum Computer Technology. With the enormous economic pressure to produce ever smaller and faster transistors, the semiconductor industry is committed to pushing silicon technology to its limits.

"Under her first Federation Fellowship, Professor Simmons has already demonstrated a radical new fabrication strategy of commercially based silicon transistors at the atomic scale," Professor Field says. "Creating an international hub for atomic-scale electronics in Australia, she

now plans to address fundamental impediments to transistor scaling, which are of vital strategic importance for the global semiconductor industry."

Professor Aibing Yu, UNSW Scientia Professor and Director of the Centre for Simulation and Modelling of Particulate Systems, is a world-leading scientist in powder and process engineering with expertise in the simulation and modelling of particulate systems.

"Professor Yu's research program aims to overcome problems in the design capacity of particulate and multiphase processes used widely in Australian industries that provide significant export income, such as minerals, metallurgical, chemical, energy, pharmaceuticals and materials," Professor Field says. "Using an extensive combined fundamental and applied approach, he plans to improve process design, control and optimisation to enhance Australia's productivity and competitiveness in these industries."

* For more on Brett Neilan's research go to page 11. ■

- Dan Gaffney

New centre for cannabis prevention

Cannabis continues to be the illicit drug of choice in Australia, with new figures showing that just over one-third (33.5 percent) of adult Australians have tried it.

More alarmingly, at least 200,000 adults are believed to be cannabis-dependent, with around one in ten who tries the drug forming an addiction at some time in their lives.

While the number of Australians who have problems with cannabis is on the rise, so is the rate of people seeking treatment. Three times the number of people are now seeking help compared to 15 years ago and demand is particularly strong among young people. Around half of the presentations to drug treatment among 10 to 19-year-olds are related to cannabis, compared to 25 percent for alcohol and 10 percent for amphetamines.



In a bid to reverse these trends, UNSW has launched Australia's first National Cannabis Prevention and Information Centre (NCPIC).

Funded by the Federal Government to the tune of \$12 million over three years, the new Centre has been officially opened by the Minister for Health and Ageing, Nicola Roxon. It will operate with close links to the National Drug and Alcohol Research Centre, also based at UNSW.

The new Centre's Director, Professor Jan Copeland, says scientists are turning their attention to this previously research-neglected drug.

- Steve Offner

The teaching connection

Innovative teaching and open dialogue have seen Associate Professor Ross Harley and Associate Professor Jill Bennett awarded Vice-Chancellor's Awards for Teaching Excellence.

By **Fran Strachan**

Associate Professor Ross Harley is breaking down the traditional walls of learning and enhancing them with virtual teaching spaces that encourage interconnection and interaction.

"My student's lives revolve around SMS, YouTube, Skype, Google and Facebook. What I've done is tap into their natural competencies and what part of their lives is already," the head of the School of Media Arts at COFA explains.

Ross's blended learning approach has been recognised with a Vice-Chancellor's Award for Teaching Excellence.

By incorporating web-based resources and social networking sites into his face-to-face teaching practice, Ross provides an innovative way for students to motivate themselves and take control of their own learning.

After teaching in universities for 20 years, Ross began to notice lecture numbers slowly decreasing, particularly more recently. His response was dramatic.

"I decided to do web-lectures and make successful completion of the course contingent on online involvement," he explains.

Ross created an interface where students could blog, post videos, view each other's assignments and offer feedback. He recorded webcam pieces to camera and posted relevant course material in multimedia formats.

"Teaching can't be all about words and text. Working with images, graphics and sound is another way students learn to connect with teaching material on different levels," he says.

Surprisingly, Ross believes learning in both virtual and face-to-face environments promotes a closer connection between teachers and students.



Changing the way we teach ...
Ross Harley and Jill Bennett

Photo credit: Susan Trent, Gasbag Studios

Teaching can't be all about words and text.

"I'm a big fan of informal channels of communication, that's where the things of value happen," he says.

Ross has supervised more than 70 postgraduate students in the past 20 years but still finds preparing graduates for the workforce the most rewarding part of teaching.

"If I've prepared them even remotely for all the completely unpredictable parts of being out in the world I feel like I've done my job," he says smiling.

Associate Professor Jill Bennett, COFA's Associate Dean (Research) has received a Vice-Chancellor's Award for Teaching Excellence for her PhD supervision.

Jill has spent a large part of her 13 years at COFA establishing its first combined theory-practice PhD program and her students have been acclaimed by international examiners as leading examples of the success of the degree.

Jill places the same value on interaction and cohesion among students as her colleague. She believes the key to good PhD supervision is to keep dialogue open between supervisors and students.

"Completing a PhD can be very isolating. Unlike science disciplines where PhD students collaborate with other researchers, artists work independently," she says. "Supervisors are the main point of contact and without their support the whole project can fall apart."

To minimise the risk of students discontinuing, Jill has created support structures for both supervisors and students.

"PhDs need to be seen as a collegial and collective endeavour rather than a solo effort," she says.

"We try to bring people together as much as possible through reviews and seminars. We've also created lounge and workspaces at COFA for students to connect and discuss their projects, as well as an online postgrad community that students can tap into no matter where they are."

Jill is also the founding Director of the UNSW Research Centre for Contemporary Art and Politics. "Centres play a huge role in cementing the postgrad community at COFA," she says.

Although Jill has been involved in creating one of the most widely regarded PhD programs in the sector, it is seeing her students finish the most demanding phase of their degree that gives her the most satisfaction.

"Witnessing the most challenging research projects come to completion is incredibly rewarding - particularly when the going has been tough!" she says. ■

LIGHT RELIEF



Redesigning COFA

Redevelopment plans aim to make COFA part of Sydney's cultural hub.



An architect's impression of the UNSW Art Museum redevelopment

Photo courtesy of Architectus

Plans for a \$35 million redevelopment of the College of Fine Arts campus at Paddington, currently before the State Government, could be the first step in transforming Oxford Street into a major artistic and cultural hub for Sydney.

The redevelopment, the most significant in the history of the site, includes plans for a "Triple A" rated art gallery - Triple A being the international standard for lighting, environment and security control.

The new gallery, the UNSW Art Museum, is designed by Architectus, the firm that designed Queensland's renowned Gallery of Modern Art. Facing Oxford Street, the Museum would be a major addition to the area, which has been designated as a potential art, design and cultural hub in the City of Sydney's 2030 Plan.

The Museum would include around 700 square metres of gallery space plus close to 590 square metres of teaching space, which can also be opened up for exhibitions. It will replace the existing Ivan Dougherty Gallery in Selwyn Street, which will be preserved as part of the COFA library.

As well as the Art Museum, the proposal provides for additional studio and work spaces for students, enhanced traditional media facilities as well as high-tech labs, and a residence for visiting national and international artists and researchers. A series of inner courtyard spaces will take advantage of the topography and showcase the heritage buildings that have existed on the site for over 100 years. Pedestrian and vehicular traffic will be oriented towards

Oxford Street and away from the Selwyn Street and Albion Avenue residential areas.

COFA Dean Professor Ian Howard describes the redevelopment as a visionary project that will transform the campus and ensure that COFA remains at the forefront of creative art education in Sydney and Australasia.

"The new campus will be a creative laboratory for art, design and media - a space for exchange between different disciplines and a dynamic environment for the production, display and critique of art, design, and new media work," he says.

"As well as the City of Sydney's 2030 Plan, the proposal is in line with the creative industry initiatives currently being championed by the Federal Government.

"In fact I believe this could be seen as the first major project to 'kick-start' an enhanced vision and role for the creative industries in the Harbour City."

Planning for the redevelopment of the historic site began in 2000, when several ideas were developed and tested. A comprehensive master plan for the campus was approved by the City of Sydney in 2006, following extensive community consultation.

An architectural competition was held in 2007, and the company Architectus (in association with Cracknell & Lonergan) engaged to carry out the design work for the project.

If the plans are approved, it is expected that construction will begin in December this year and be completed in 2010. ■

- Judy Brookman

[re] frame

Filipino artists have showcased their traditional embroidery in the heart of Manila as part of a community outreach project organised by UNSW's Omnium Research Group and COFA.

[re] frame Manila is the third annual not-for-profit Omnium Outreach Project to encourage students, educators and professionals to collaborate globally on socially responsive art and design projects.

Over the past six months the project has provided consistent employment for 15 embroiderers and five woodworkers, who have created 2,500 framed embroidery panels, culminating in a five metre by 11 metre high art installation.

The completed artwork has now been installed in the foyer of the De La Salle College of Sainte-Benilde, Manila, one of the major art and design colleges in the Philippines.



Photo courtesy of Rick Bennett

Traditional Filipino embroidery is being turned into modern art

Senior COFA lecturer and Omnium founder Rick Bennett sees the main aim of [re] frame Manila as developing new commercial opportunities for local artists while allowing them to remain loyal to their Filipino culture and heritage.

"The installation acts as a dynamic portfolio to showcase the skills and techniques of local artists and will provide possibilities for future commissions to assist their livelihoods," says Rick.

All Omnium Outreach Projects are fully funded from sales of Omnium software and commercial design projects. Previous projects have assisted communities in Kenya, East Timor and Sri Lanka. ■

Load your lectures on iTunes

Students who travel long distances or miss the odd lecture now have a mobile means of catching up on class work.

istock



Technology is not likely to replace the benefits of face-to-face teaching - and student surveys indicate there is no desire to replace the campus experience. But the chance to revise or catch up on missed lectures is another story.

That is why UNSW has become one of six Australian universities to offer flexible, mobile learning to students via iTunes U, Apple's worldwide outlet for digital educational content.

Launched recently in Australia, New Zealand, Britain and Ireland, iTunes U allows users to download free video, audio and PDFs to their laptop or iPod - just like they do with music.

Users will now have 24/7 access to UNSW content, along with material from some of the world's other top educational institutions.

Lecturers will be able to set up a podcast feed of any course, with students receiving a weekly delivery of content directly to their computer or iPod.

In Session 2, lectures recorded on Lectopia will directly populate iTunes U, using the same security controls that are used in Lectopia. It will be up to academics and course convenors to decide if they want to make content public.

Faculties can use iTunes U for regular communication with professional and industry groups or alumni who can now subscribe to regular podcasts, including magazines in PDF form. Faculties and some divisions such as IT are already using iTunes for "How To" videos on certain procedures.

"iTunes is different from YouTube in that it is downloadable and can be viewed on mobile devices - which is one of the most frequent requests we get from students. They are also different audiences," says Patrick Stoddart, from Learning and Teaching, who managed the UNSW iTunes U project.

YouTube represents casual browsers while iTunes U users, due to the nature of the content, are looking for something specific.

"The benefit of iTunes U is that you can have private areas just for students and staff, which is important in meeting our copyright obligations," says Mr Stoddart.

Currently, all content on UNSW's iTunes U channel is publicly available but the Learning and Teaching team is working with Apple to offer secure spaces for copyright-sensitive material by the end of July.

The launch represents the completion of the second phase of the UNSW TV project, which will ultimately deliver three digital publishing outlets to UNSW users and subscribers - YouTube, iTunes U and UNSW's own purpose-built online channel.

Click on the iTunes U icon on the UNSW homepage to access the channel.

For production help and advice contact Tom Cavdarovski, t.cavdarovski@unsw.edu.au, <http://learningandteaching.unsw.edu.au> ■

- Mary O'Malley

Building a healthy future

UNSW is tackling the shortage of rural doctors head on - and the approach is already paying dividends on the NSW Mid-North Coast.

UNSW's Rural Clinical School program trains medical students on its four campuses and "early indications are that these students are opting to return as doctors to work in these areas," says Professor Louis Pilotto, Head of the Rural Clinical School.

The School started eight years ago in Wagga Wagga and quickly extended to Albury-Wodonga, Port Macquarie and Coffs Harbour.

As part of UNSW's commitment to the program, a multi-million dollar, state-of-the-art building was recently opened at Port Macquarie, funded by the Commonwealth Department of Health and Ageing.

"Students recently graduated from this campus are returning as Junior Medical Officers and Specialist Trainees," says Associate Professor Peter Reed, the head of UNSW's Port Macquarie campus.

UNSW's Deputy Chancellor Gabrielle Upton, who opened the new building, says the endeavour is a sign of UNSW's commitment to the broader community.

"UNSW was the first university in

Australia to set up a Rural Clinical School. We are proud of our engagement with these local communities and look forward to strengthening the association," she says.

The Dean of Medicine, Professor Peter Smith says, "It is another sign of the Faculty of Medicine's relevance to the public through research and teaching."

All undergraduate medical students are able to spend time in their final years at the Rural Clinical School. There are currently 25 students studying at Port Macquarie in the final years of their medical program. ■

-Susi Hamilton

Industry linkages provide real solutions

UNSW's partnerships with corporate Australia are solving contemporary problems.

Made from waste

By Louise Williams

It's taken him a decade in the lab, but a UNSW civil engineer has managed to turn the polluting fly-ash waste from coal-fired power stations into an environmental solution for the world's carbon-hungry construction sector.

The first 100 percent "made from waste" fly-ash bricks, pavers and aggregates are coming off the production line at a pilot plant in a special Chinese zone for industrial recycling. It's called "industrial ecology"; transforming the waste from one industry into a valuable resource to feed another industry and

removing a global pollutant from our ecosystems along the way.

In another recent UNSW breakthrough, a new commercial green steel-making process is using waste plastic in the furnace, turning rubbish into a fuel and reducing the use of high-emission coke and coal.

Transforming theory into commercially viable solutions for real-world problems demonstrates the benefits of universities and industry working together.

The fly-ash building products are the culmination of a scientific dream for Dr Obada Kayali, a senior lecturer in Civil

Making rubbish useful ...
Obada Kayali and his fly-ash bricks

“You can imagine how good this is for greenhouse gas emissions.”

Engineering at UNSW@ADFA. Apart from the immediate environmental benefits of utilising fly-ash - hundreds of millions of tonnes of which contaminates the air and clogs the world's waterways - the new building products also offer significant cuts to greenhouse gas emissions for the construction sector.

The new lightweight fly-ash aggregate replaces quarried rocks such as blue metal and gravel, which are mixed with cement to make concrete. Concrete and cement accounts for about 10 percent of emissions worldwide. The fly-ash aggregate is lighter and bonds better with cement than conventional materials, reducing the amount of cement needed to make high-strength concrete for construction - and cutting emissions by at least 20 percent. The fly-ash bricks are also lighter, meaning smaller foundations, less steel and reduced emissions.

“The amount of building going on in China - and the pollution - is unbelievable. If we can reduce the use of cement as much as possible there, that is a very big gain, not only for China, but for the global environment,” Obada says.

Following the successful commercial trials in China, with Vecor Global, UNSW's commercial arm, NewSouth Innovations (NSi) is negotiating to license the technology in Australia, Indonesia, India,

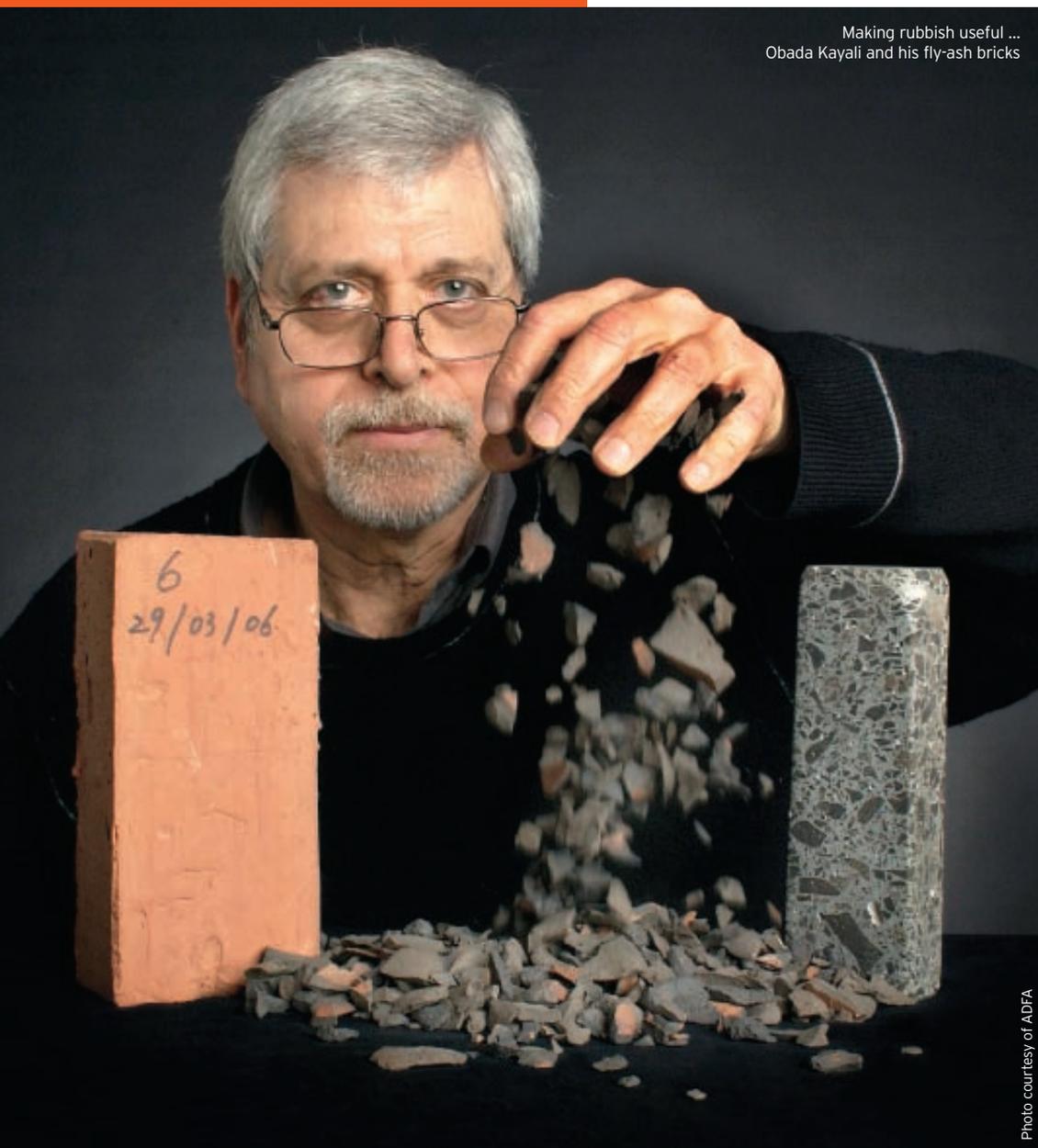


Photo courtesy of ADFA

the United States and the Middle Eastern construction hubs of Dubai and Kuwait.

The quest to turn fly-ash into a useful resource has occupied scientists for decades, and a small percentage of the world's 800 billion tonnes a year is already used as an additive to cement and mixed into bricks. However, earlier fly-ash aggregates have needed more cement, not less, negating the environmental benefits.

"My research was about finding a way to produce a lightweight aggregate from fly-ash which used less cement - this is the big difference. You can imagine how good this is for greenhouse gas emissions," says Obada.

UNSW materials scientist, Professor Veena Sahajwalla, has found similar environmental and economic benefits in her new green steel, which has now been commercialised by OneSteel. OneSteel has signed a global licensing deal with UNSW's commercialisation arm, NewSouth Innovations (Nsi), giving the Australian steel-maker rights to sub-license a new green technology that boosts productivity, cuts power bills and reduces greenhouse gas emissions in electric arc furnace (EAF) steel-making.

By reacting blends of waste plastic and coke/coal at intense temperatures in EAF steel-making, Veena produced an identical end product, but used less electricity. Her green steel-making recycles waste which would otherwise accumulate in landfills.

This research is being conducted in the Centre for Sustainable Materials Research & Technology (SMaRT@UNSW) which was established in January this year. The Centre, of which Veena is the Director, is focused on finding ways to reduce the environmental impact of materials-related industries by developing innovative materials and processes through world-class research.

"We have never really looked at waste with the respect it deserves. We shouldn't look at rubbish as waste, but as just another resource and we need to develop the recycling science to match," she says.

Veena was recently promoted to Associate Dean (Strategic Industry Relations) and is involved in hosting an industry science forum with a number of key organisations, in the hope that a relationship similar to that with OneSteel can be created. ■



To see more on this story go to UNSW TV - <http://au.youtube.com/watch?v=INUcz3Lv-Kk>
<http://au.youtube.com/watch?v=hDWbB6IXYo0>

Working together for real change

By Victoria Brown

In the most recent round of Linkage Grants from the Australian Research Council (ARC) UNSW received the highest portion of funding of any Australian university - a success which further demonstrates UNSW's capacity to form fruitful working relationships with industry leaders.

UNSW received just under \$11.5 million or 18 percent of the \$63 million worth of grants awarded nationwide. In addition to the government funding the grants bring with them contributions from industry partners of an additional \$21 million.

UNSW has traditionally been a leader in Linkage Grant funding, reflecting the University's practical approach to contemporary and social issues.

"UNSW is the national leader in engaging with industry, government and the community to find real solutions to real problems," says Deputy Vice-Chancellor (Research) Professor Les Field.

"We are not only developing new technologies with industry partners such as Suntech, but these relationships are also allowing us to develop new ways of utilising products we already have through projects such as the ones with OneSteel and fly-ash, both of which take a waste product and turn it into a useful material."

The largest grant, worth \$1.6 million over six years, goes to a team led by Professor Martin Green from the School of Photovoltaic and Renewable Energy Engineering, for a project targeting a new generation of low-cost silicon solar cells that will significantly reduce the cost of generating electricity from sunlight. The collaborating organisation is CSG Solar Pty Ltd.

This industry and ARC funding for photovoltaics is in addition to the area's close ongoing relationship with UNSW alumnus Dr Zhengrong Shi and his company Suntech Power Holdings. This relationship includes a sponsorship program, which commenced this year, where Suntech pays for up to 30 Chinese students and Suntech employees to study a Masters program in photovoltaics at UNSW's School of Photovoltaic and Renewable Energy Engineering.

Other relationships established by the ARC funding include the Australian School of Business team, led by Professor Michael Sherris, in partnership with the Australian Prudential Regulatory Authority, PricewaterhouseCoopers Australia and the World Bank, and researchers led by

Professor Rick Cavicchioli from the School of Biotechnology and Biomolecular Sciences working to improve the sustainability of Australia's water resources with Aeris Technologies Ltd.

Industry partnerships with the University are not, however, limited to technology research funding. Legal firm Gilbert + Tobin is the primary sponsor of the Gilbert +Tobin Centre of Public Law in the Faculty of Law, which plays a prominent, independent role in public debate on issues vital to Australia's future including Bills of Rights, the reconciliation process and native title, and the challenges of responding to terrorism.

The University Council is also a source of close industry ties. Members from the private sector such as Matthew Grounds, Australian head of Investment Bank UBS and Wal King, Chief Executive of Leighton Holdings, as well as UNSW Chancellor and chairman of Investec Bank David Gonski, provide the University with expertise in areas including finance, commercial activities, the law, governance and management, and planning and development.

As well as fulfilling roles on the University Council business leaders serve on a number of advisory boards around the University. One example of this commitment is Warwick Negus, Chief Executive of Colonial First State Global Asset Management, who is the Chairman of the Executive Committee of the Faculty of Business and the Director of the UNSW Foundation Board, in addition to his role on the University Council.

Industry partners also provide a large number of the scholarships available to UNSW students through the UNSW Co-op Program, which has been established by industry and UNSW to provide financial reward and industrial training for selected undergraduate students in the disciplines of Business, Science and Engineering. ■

UNSW works with a wide range of industry leaders. Here are some of our most successful partners:

Leighton Holdings	Freehills
Mitsubishi	CSIRO
Development	Cochlear
Parsons	Weir Minerals
Brinckerhoff	Bovis Lend Lease
Gilbert + Tobin	Brookfield Multiplex
Allens Arthur	Hassell
Robinson	Woodhead

Sustaining our cities

Two UNSW academics are working with the United Nations to protect our future. By **Victoria Brown**

One of the biggest global challenges currently taking place is urbanisation. The number of people living in cities continues to grow and soon, for the first time, more than 50 percent of the world's population will live in cities.

In the past the way we have built and maintained our cities has been unsustainable, and cities have become one of the most tangible demonstrations of how people are damaging our planet. UNSW academics Professor Deo Prasad and Dr Peter Graham are working with the United Nations (UN) to ensure the future is a brighter picture.

"With so many people now living in cities we must find a way to make them [cities] more sustainable," says Deo, a sustainable living expert from the Faculty of the Built Environment (FBE).

Peter, also from FBE, agrees. "Buildings are responsible for about one-third of all of humanity's greenhouse gas emissions. There is a need to mitigate emissions and begin to adapt to climate change," he says.

Both Deo and Peter have taken on key roles with the UN in order to take the message about changing our cities to the world.

Deo is the chair of the UN Environmental Programme's (UNEP) Asia Pacific Committee on Urbanisation.

"One of our key roles is to provide a knowledge base to help people practising in this area to realise the problems of urbanisation," he says. "Many

people don't think there is a problem, or don't believe that it can be solved. Our job is to assess, evaluate and guide cities in how to go down sustainable pathways."

Deo recently travelled to Shanghai on behalf of UNEP to advise the government's State Environment Protection Bureau on an integrated sustainability assessment tool that helps cities to monitor and track how they are changing. He also advised the governments of the Wuxi and Suzhou cities, and earlier this year he completed an eight country Asian tour discussing the future of architecture in light of sustainability concerns.

Deo's own research looks at tools for sustainable development, as well as specific aspects of high-performance buildings. He also looks at how large companies can take the sustainability idea as part of their daily work in design, construction and management.

Peter is currently working in Paris as the co-ordinator of the UNEP's Sustainable Buildings and Construction Initiative. He is also a key author, with Dr Phillip Booth, from FBE, and Deo on a UN White Paper on Strategies for Education, Awareness and Capacity Building for the Design, Construction and Maintenance of Eco-Cities and Villages in the Asia-Pacific.

"I work closely with the public, civil and private sectors to facilitate the global transition to mainstream sustainable buildings and construction," he explains.

Peter's academic research looks at two major areas; the development of curriculum models for teaching ecological design and building construction, and assessing the life cycle sustainability impacts of building.

"Through the UN this work is assisting in sustainability education, and is guiding international think-tanks on benchmarking the environmental performance of buildings and climate change, and in establishing a global reporting process to indicate how effectively the building sectors in different countries are reducing greenhouse gas emissions," he says.

"The latest estimates from the Intergovernmental Panel on Climate Change have the Earth's mean temperature increasing by two to three degrees Celsius sometime in the next 100 years. In addition to becoming less emitting, buildings must therefore also enable us to adapt to climate change."

According to Peter, we are currently not adequately educating building practitioners to deal with the changes.

"To maintain global relevancy we need courses which are designed as vehicles for sustainability research, development and innovation rather than simply aiming at 'professionally accredited' courses, in which 'sustainability concerns' are integrated," he says.

"Few universities are taking the lead with an integrated approach to research and curriculum in this area and I think UNSW has the potential to play this role." ■

“With so many people now living in cities we must find a way to make them more sustainable.”

Making our cities sustainable for the future

Life on Earth is older than we thought

New research suggests that 3.5 billion years ago Earth was already teeming with diverse microbial life. By **Bob Beale**

New studies of the world's most primitive living things - colonies of bacteria found on the Western Australia coast - suggest that life on Earth may have begun much earlier than the accepted date of about 3.5 billion years ago.

The colonies build rock-like structures, known as stromatolites, in tidal pools at Shark Bay and research has revealed that they are comparable with ancient stromatolite fossils found in the nearby Pilbara region, which are the oldest convincing evidence of life.

Sophisticated investigations by a team from the UNSW Australian Centre for Astrobiology (ACA) have now revealed that the colonies are very biologically diverse - involving many more than just a few species as previously thought - and that the same was probably true of the 3.5 billion-year-old Pilbara stromatolites.

"Powerful new chemistry and genomic tools have revealed that the Shark Bay stromatolites have remarkable biodiversity, with evidence so far of more than 100 species of bacteria," says ACA Deputy Director Professor Brett Neilan.

"In effect, this suggests that by 3.5 billion years ago Earth was already teeming with diverse microbial life. If this is so, evolution must have already been going on for a long time. We can't be sure, but certainly many tens of millions of years earlier. These findings could reset the start of the clock of life."

ACA Director Professor Malcolm Walter says the findings also add a fresh perspective to the long standing controversy about whether oxygen-releasing cyanobacteria were already present at that time.

"The release of oxygen to the oceans and atmosphere changed the Earth forever and set the scene for all subsequent evolution," Malcolm notes. "We would not be here were it not for this event, and there is no better place than Australia to study such an important evolutionary episode."

The findings take on added relevance for the ongoing search for signs of life on Mars. Malcolm is also a member of an international group planning the first two-way mission to Mars, which aims to return samples to Earth from carefully selected sites on Mars most likely to have evidence of life. That mission will not occur before 2018.

Malcolm says that this will be one of the greatest exploration missions in human history, and Australian scientists are ready to make a substantial contribution. Lessons



Explaining our past ... stromatolites in the tidal pools of Shark Bay, WA

“These findings could reset the start of the clock of life.”

learned from Shark Bay and the Pilbara will play a vital role.

The ACA is the focus for a broad research network that includes a wide range of researchers at UNSW and elsewhere studying the origins of life on Earth and evidence for possible life elsewhere in the universe.

The network includes eminent astronomers Professor John Webb and Professor Chris Tinney in the UNSW School of Physics, who are looking further afield at planetary systems beyond our own. They are part of a growing movement probing the processes of planet formation and, ultimately, evaluating the possibility of life elsewhere in the universe. ■



To see more on this story go to UNSW TV - <http://au.youtube.com/watch?v=Qt9butyran8&feature=Playlist&p=EA58B7E58D2B555F&index=0>

Astrobiology is a relatively new field of study, developing at the crossroads of astronomy, biology, geology, palaeontology, physics and other disciplines.

The ACA began life in July 2001. In addition to being an Associate Member of the NASA Astrobiology Institute, it also has close links with the European Space Agency and other international space agencies and institutions.

It is one of the few organisations in the world that is truly inter- and multidisciplinary in a way that is reflective of astrobiology as well as being the only centre of astrobiological research in Australia.

Its key goals include contributing to the understanding of the origin of life on Earth and to set an Australian life-seeking instrument on the surface of Mars. It also has a strong media, education and outreach program related to its research, and which has attracted Australian Federal Government funding.

Saturation coverage

From the vexed questions of whether Australian media and advertising sexualises children and young people's use of online and mobile technology, through to the changing role of journalism in the age of the blog, researchers in the newly-launched Journalism and Media Research Centre are leading public debates about our media. By **Susi Hamilton**

When police swooped on a Paddington art gallery recently, seizing Bill Henson's photographs of naked teenagers, the Director of the Journalism and Media Research Centre Professor Catharine Lumby was deluged by phone calls from journalists. Several years earlier, Catharine and her colleague Kath Albury had noticed the growing concern about media images of children and recognised the need for research.

While Catharine's work focused on the cultural history of representations of children and what kinds of clothes, toys and media were marketed to them, Kath's work looked at teenage girls and the so-called "raunch culture".

That work culminated in a submission to a Senate inquiry into the sexualisation of children in the media.

"It's dangerous to make public policy in an evidence-free zone, or on the basis of what people 'feel' is happening," observes Catharine. "The first thing we said in the submission was that we think that serious empirical evidence needs to be done in an Australian context.

"There are a lot of people talking on behalf of young people, but it is also possible to do excellent and empirical research with children and young people which focuses on their experiences of the media and how they think it affects them," she says.

True to the Centre's objective of being an authoritative voice in public debate and policy formation, the submission also made some suggestions which can be acted on quickly.

"You can't just say we need more research - although we do. When there's this level of concern about something you also need to look at concrete ways of addressing it," she says.

The Senate submission called for an overhaul of the current framework for making complaints about the media.

"A common concern about the regulation of media content is that many individuals find it difficult to navigate a complaints system that is so diverse," Catharine says.

"There are so many different bodies involved that the system resembles a bowl of spaghetti. Consumers often feel powerless," she says. "We need a one-stop

shop where people can make their complaints and be directed to the right complaints process."

Catharine and Kath have also called for the Federal Government to co-ordinate a national age-appropriate sex education program in schools that includes a discussion of media material dealing with love, sexuality, gender and relationships.

The practice of journalism itself will also come under the Centre's spotlight, through the work of Associate Professor David McKnight and others. David is about to publish a book about the political commentary printed in the US, the UK and Australia by the media outlets of News Corporation.

The role and social impact of online and mobile media technology is another key area of the Centre's research. Professor Gerard Goggin and his colleague Associate Professor Kate Crawford are embarking on an Australian

Research Council-funded project looking at youth culture and mobile media.

Eighteen to 30 year olds - long seen as being the fastest adopters of new technology - are the focus of the study.

"We need to look at what people are doing with the technologies, rather than what the technologies are doing to them," says

Gerard. "There is this idea of technological determinism, but people have an active role in determining whether they like it or not. The products don't come into a void."

Questions such as how many mobile phones and portable music devices young people own and how



“Young people ... are seen as using technology too much, yet on the other hand they are seen as being in danger of being socially disconnected.”

they use them – from making videos to using Bluetooth – are ones they hope to answer.

“Young people are seen to be guilty of two incompatible sins,” observes Gerard. “They are seen as using technology too much, yet on the other hand they are seen as being in danger of being socially disconnected.

“Intuitively that seems a little strange. If they are on technology all the time, who are they talking to? Themselves! In the case of mobile technologies, the most common thing people say on the mobile phone is ‘I’m here. Where are you?’ So the conversation is all about

place. Mobile phones give us a cue – they are about connecting us into place and societies, rather than disconnecting.”

Whether using a portable music device in public makes you anti-social is one question Associate Professor Kate Crawford hopes to answer as part of another project that will look at what music technology means for musicians, audiences and the broader public.

“The idea of listening and how we listen is fundamental,” says Kate. “Yet we don’t have studies to show how we listen and how we spend time alone.”

It’s a natural area of interest for Kate, who until recently was one half of the electronic music duo known as B(if)tek.

“We hear that this sort of technology isolates us. The criticism is that they are somehow drawing us away from communal publics, that these spheres are suffering,” she says.

“The way that we listen changes with technology,” she says. “But people are still drawn to hearing music together in public space.”

While Kate believes that the live performance may be a ‘critical experience’ in which the performer and the audience interact, she’s also interested in whether music communities can exist without ever being in the same physical space.

“A music community thrives between artists and listeners. You are conducting a kind of conversation. You are participating in an individual sense,” she says.

“What does it mean if you never engage physically with that world? You just need to look at Facebook and Twitter sites to see that communities are being dispersed, but what does

it mean for the musical experience?”

She suggests that a jazz fan listening to Miles Davis on a personal music device might actually be connecting with the broader jazz community, without ever stepping foot in a darkened basement.

The Listening Project is funded through the Cultural Research Network.

Looking at media from a very different perspective is Dr Clif Evers, who has a post-doctoral position with the Centre.

Young men and sexuality is the focus of one of his projects, which could lead to new sex education programs in schools.

“Porn and *Cleo* is where young men learn about sex,” says Clif, who grew up in the surf culture of southern Sydney. “You can’t go to your mates and ask: ‘How do you do this?’. They learn through the media.

“Existing sex education programs are about telling the young men what to do,” says Clif. “But they know how to have sex – what they want to talk about are the difficult, ethical questions. These are questions that are not getting answered. If they produce their own media, they are going to start addressing some of these things.”

Magazine covers, storylines, video clips and photographs will be produced by young men as part of the project.

“How would they like to learn about sex through the media, what would they like to be shown? How would they produce their own? They have media skills and curiosity about sexuality – what would happen if you brought them together?

“When I was hanging out in gaming rooms with young men, I noticed they were producing their own films, which they were posting on YouTube. When they do this, there are issues about sexuality which come up,” he notes. “It’s in the way they edit the films: they always cut the girls in. I think this can be taken a step further.”

Clif’s interest in the emotional lives of young men is also being produced into a book aimed at mentoring those between the ages of 14 and 20. ■

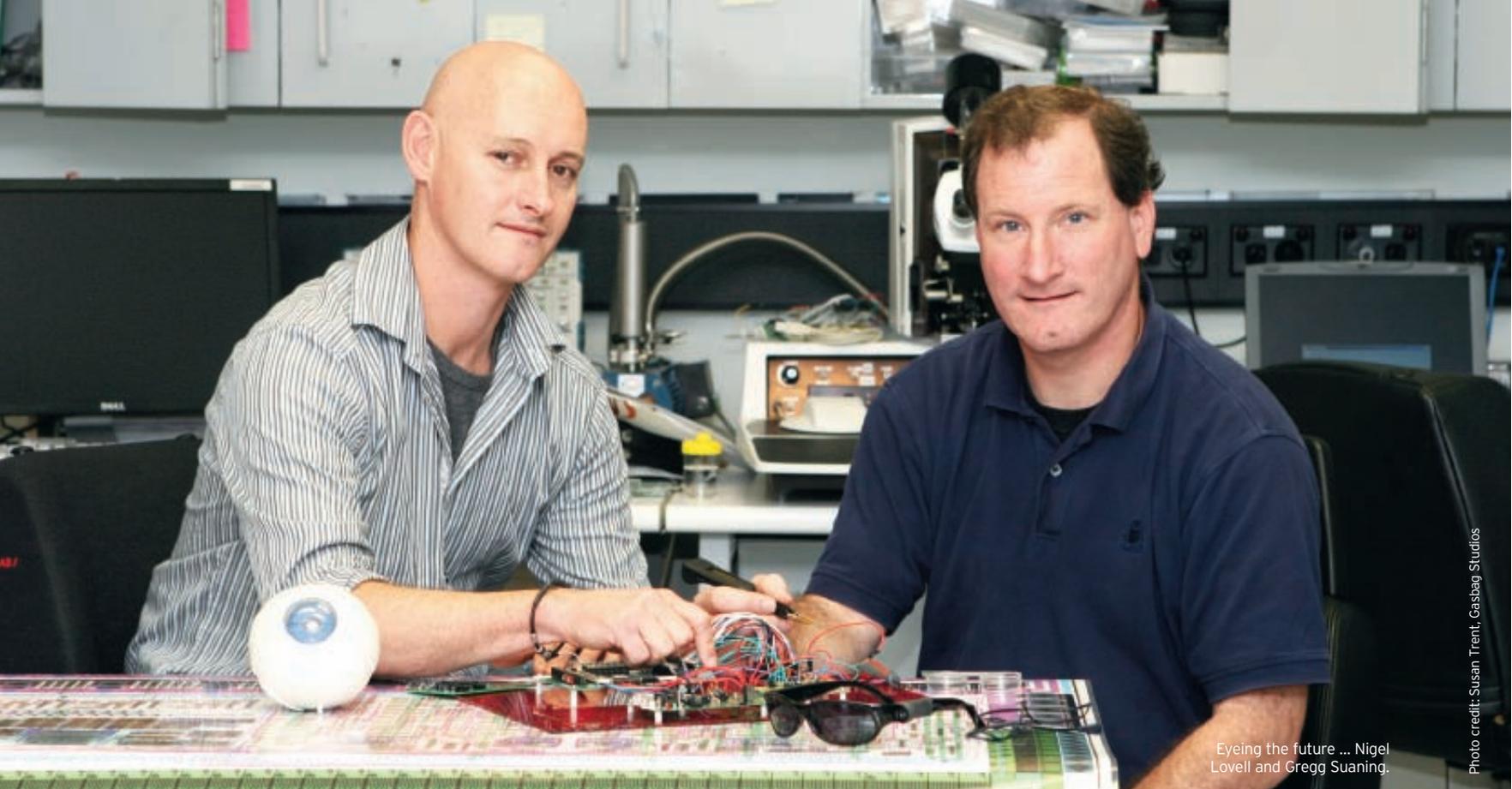
Tackling the media ... the team at the Journalism and Media Research Centre.

Back row L-R Professor Gerard Goggin, Associate Professor David McKnight, Dr Kath Albury
Front row L-R Associate Professor Kate Crawford, Professor Catharine Lumby, Dr Clifton Evers

Photo credit: Susan Trent, Gasbag Studios



To see more on this story go to UNSW TV
- <http://au.youtube.com/watch?v=VLvUHlaJcuY>



Eyeing the future ... Nigel Lovell and Gregg Suaning.

Photo credit: Susan Trent, Gasbag Studios

Vision for the future

UNSW researchers are leading the global race to create the first functioning bionic eye.

By **Peter Trute**

When Prime Minister Kevin Rudd endorsed the push for an Australian-developed bionic eye at this year's 2020 Summit in Canberra, UNSW researchers Nigel Lovell and Gregg Suaning knew that the PM's vision could become a reality if the right steps were taken - and taken quickly.

Nigel and Gregg are leading research at the UNSW Australian Vision Prosthesis Group (AVPG), which over the past decade has advanced the science-fiction dream of bionic vision to the stage of a viable "vision prosthesis" which can detect not only light and dark but also patterns.

While the device is in technical trial stage at present and human trials are still a couple of years away, Nigel says a functional device can be a reality within 12 years - with a concerted national effort.

The AVPG is not alone in the race for bionic vision: around the world, teams are working on various concepts which may prove to be the breakthrough technology which gives sight to the blind.

This year, British researchers implanted a basic bionic eye device into a patient using technology developed in the US.

But the UNSW team is confident that a fully functional, commercialised bionic eye can be an Australian world first if the co-ordination and support comes to further local development.

"There are already some overseas trials of rudimentary bionic eye devices but we have certain designs which are more advanced," says Nigel. "We need to act now if we want to take advantage of our technical edge."

The UNSW team's current device consists of an external micro-camera and microprocessor which is mounted on glasses and transmits a radio signal to an implanted electronic circuit and electrodes which are connected to the retina at the back of the eye. Mastering a successful connection of the electrodes to delicate retinal tissue is one of the engineering challenges the team faces.

At present trials are being conducted with 14 electrodes but the device can use up to 98 electrodes. The electrodes represent what might appear to the device user as points of light. Arranged in a grid pattern, these points of light can feed an image into the brain's vision centre.

Nigel says a bionic eye cannot cure all types of blindness but could be used to treat degenerative eye diseases such as retinitis pigmentosa.

"Bionic eyes could act as a device therapy where the photoreceptors are damaged but the nerve cells that connect the sense organs to the brain are still intact and functional," he says.

"Electrical current is passed through these nerve cells to create action potentials

that, in a crude manner, mimic the normal nerve traffic that the brain would experience from the sense organ - in this case, the eye. Obviously the form that this nerve traffic takes is far from the real case, so we rely heavily on brain remodelling, or plasticity, to make sense of the nerve signals."

The Australian Bionic Eye project is a collaboration between UNSW's AVPG, the Centre for Eye Research Australia, the University of Melbourne based at the Royal Victorian Eye and Ear Hospital, the Bionic Ear Institute and Australia's National Information and Communications Technology Research Centre of Excellence.

Nigel says he and other researchers are working to form a single, national group to drive an Australian bionic eye forward.

Gregg says the bionic eye project needs a relatively small amount of funding to become a reality and welcomed the support for the project voiced by Prime Minister Kevin Rudd.

"This isn't going to cost anything like a space program," he says. "We can get it done here in Australia with local funding - we are talking millions, not billions." ■



To see more on this story go to UNSW TV - <http://au.youtube.com/watch?v=GZOG9odShF4>

A vision splendid

A team of UNSW researchers based at the Prince of Wales Hospital has reported success with its own version of the “bionic eye” based on the same technology as the bionic ear or cochlear implant.

Last year the team, led by Dr Vivek Chowdhury and Professor Minas Coroneo from the Bionic Eye Foundation, began the first human trials of a device that works by placing small electrodes over the outer surface of the eye. These electrodes stimulate the eye, eliciting the perception of small spots of light or phosphenes. When enough phosphenes are elicited, patients wearing a camera and a small “pocket” computer would be able to perceive very basic representations of objects.

Vivek says the device is a culmination of 10 years of research and collaboration with the Cochlear company, and is the first of its type in the world.

“Unlike other bionic eye techniques, this device is implanted on the outer surface of the eye, not inside the eye, thereby avoiding the need for invasive surgery,” he says.

While the early trials - which involved the devices being removed after two hours of testing - have been encouraging, restoring perfect sight is still a long way off.

The researchers estimate that around two million connections from the eye to the brain are needed for perfect sight and that current techniques deliver between 20 and 60 phosphenes.

However, Vivek says the team is planning to conduct a permanent implant of the device later this year.

“We still have a long way to go, but these trials are important steps and who knows where this research could go from here.” ■

- Steve Offner

Next generation diabetes control



Hope for diabetics ...
Justin Gooding

Photo credit: Susan Trent, Gasbag Studios

UNSW researchers are developing a simple mobile test kit that would allow diabetics to check the effectiveness of their diabetes therapy.

If the test proves effective it would save the time and costs currently associated with lab testing of diabetes control among diabetics and those at risk of the disease.

Like a pregnancy self-test kit, a self-administered test kit could be sold over the counter and make self-testing convenient and straightforward for individuals.

The test measures a blood-based biological marker, known as glycated haemoglobin (HbA1c), which is elevated when diabetes mellitus is poorly controlled.

The higher a person's HbA1c, the higher their risk of developing problems such as stroke, and eye, kidney, heart and nerve damage.

An HbA1c value is more informative to physicians than the single fasting blood glucose (blood sugar) value that diabetics measure daily, according to Professor Justin Gooding from the School of Chemistry, who is developing the test.

“It is proportional to average blood glucose concentration over the previous four weeks to three months and is therefore a good estimate of how well diabetes is being

managed over this period,” he says.

“Glycated haemoglobin is a molecule in red blood cells that attaches to glucose. In the normal 120-day life span of the red blood cell, glucose molecules join haemoglobin, forming glycated haemoglobin.”

Justin heads UNSW's Biosensors and Biodevices Group, which is working at the boundaries of analytical chemistry, physical chemistry and biochemistry.

A significant part of the Group's research centres on the development of biosensors, which exploit the body's biological recognition molecules, such as enzymes, peptides and DNA, for a range of chemical and biological analyses.

“The biosensors we are investigating link the remarkable specificity of some biological molecules with a signal transducer,” he explains.

“This means that we can detect a single species, such as glycated haemoglobin, within a complex medium such as blood, without the sophisticated sample preparation needed in a testing lab.”

The Biosensors and Biodevices Group is in discussions with US company, AgaMatrix, which specialises in patented next-generation biosensor technologies. ■

- Dan Gaffney

Counting the cost

The prolific work of UNSW's Professor Larry Dwyer has not only set academic records, it has forever altered the way travel authorities analyse the economics of tourism. By **Chris Sheedy**

A study reported in the international journal of Tourism Management identifying the most influential scholars in the field of tourism research has named Professor Larry Dwyer, Qantas Professor of Travel and Tourism Economics in the Australian School of Business, as the most cited internationally of all Australian tourism researchers over the past decade. While this recognition is indeed flattering, it's the effects Larry's work is having within the industry itself that truly speak volumes.

For decades travel authorities have analysed the economic impact of tourism utilising simple input-output models which, by their very nature, have been unable to capture the full picture of the effects of tourism on the broader economy. But after decades of dedicated research and economic modelling Larry and his colleagues have developed a framework that offers an accurate indication of the true value of tourism - and sometimes that value is not as great as stakeholders might think.

"When you're a tourist and you're exploring a new place you might buy a newspaper, go to the theatre, buy toothpaste, catch a taxi, buy a beer," Larry says. "None of these are directly related to the tourism industry and so their economic contribution has often not been properly understood.

"But there's been a push over the last decade towards the importance of tourism satellite accounts which can create more credible estimates of the economic importance of tourism. Through the Centre

for Economics and Policy, within the Sustainable Tourism Cooperative Research Centre, we've created these for all states and regions in Australia. It's the first time an entire nation has had a set of tourism satellite accounts developed individually for each state and territory."

Just as various changes within an ecosystem have an effect on other, seemingly unrelated, parts of that ecosystem, travel and tourism also has previously invisible economic outcomes. The modelling system developed by Larry and colleagues applies to tourism the technique of Computable General Equilibrium (CGE) modelling. It assesses the full economic impacts of tourism from any angle - be it cruise shipping, the effects of foreign investment, or the meetings, incentives, conventions and exhibitions market.

"CGE models can be used to estimate detailed impacts of changes in tourism demand on an economy, to identify the effects of economic developments on tourism, and to simulate the economic effects of policy options likely to impact on tourism which may be under consideration by governments," he explains.

"If there's an increase in tourism to Australia for instance, that will impact prices, wages and our exchange rate. Other industries will be adversely affected, especially those in export and import sectors. The CGE models allow us to look at the net balance of tourism, including gains

and losses in other sectors."

Larry's participation in groundbreaking research hasn't been developed overnight. He has been involved in research of tourism economics since 1987, when he spent time in Vanuatu, Samoa, Fiji and Tonga to investigate leakages out of the tourism system caused by tourists purchasing imported goods.

Since then Larry, who also consults to the United Nations World Tourism Organisation, has done an enormous amount of travel in the name of research and to give keynote addresses at conferences, from Thailand to Uruguay and from Turkey to Brazil. Qantas sponsors his chair via the Sustainable Tourism Cooperative Research Centre, for which Larry heads the Sustainable Destinations Research Program.

"Tourism is one sector in society and we're trying to develop it in harmony with other economic, social, cultural and environmental sectors," he says.

"It must be a good employer, it must contribute to the economy, it needs to be viable into the longer term, it mustn't destroy valued environments and it should harmonise with the social fabric with a respect for culture and without alienating resident populations. By and large, Australian tourism managers are doing it pretty well. They're trying to develop collaborative industry and government co-operation because they've recognised you need both parties to be fully involved." ■

Measuring
tourism's
economic
benefits



The city beautiful

An early 20th century movement that saw the city as a work of art resonates with the urban designers today. By **Victoria Brown**

The City Beautiful movement of the early 20th century helped define key concerns of the urban-planning profession and continues to influence design and planning, according to Professor Robert Freestone's latest book *Designing Australia's Cities*.

"Since the 1980s there has been a renewed focus on urban design, which recalls the City Beautiful movement of the early 1900s," he says. "The importance of the visual and experiential environment continues into current projects such as the City of Sydney's 'Sustainable Sydney 2030' plan."

"When people think of a planned environment everyone thinks of Canberra, but there are many more places that have been made by planners present and past, which people don't really know about," he says.

"In the early 20th century the city was conceived by many as a work of art - this was the touchstone of what planning could be. The concept had an enormous impact on the design of civic spaces, boulevards, and even university campuses and became known as the City Beautiful movement."

Around the world at that time there were many planners working to the same ideals, Robert explains.

"They wouldn't have necessarily identified themselves as city beautifiers but all shared the same philosophy - that the beauty of surroundings could uplift quality of life," he says.

"They brought a fresh vision for understanding and then shaping the landscape and they shared a belief that the aesthetic was an integral part of planning, and elevating society.

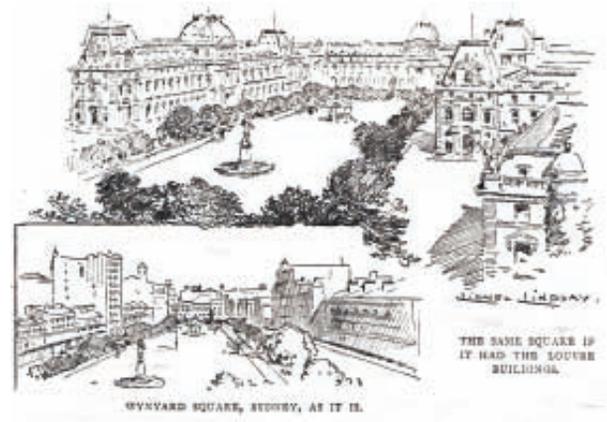
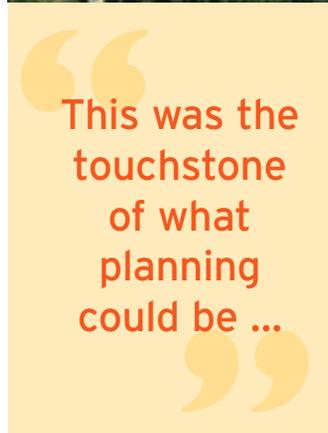
"The City Beautiful movement helped define and refine the agenda of the emerging profession of urban planning by highlighting both the possibilities and limitations of planned aesthetic interventions in the process of urban development."

The movement used a combination of both formal expression through classical building styles and informal expressions through landscape design. Interpretations varied around the world and the Australian experience was influenced by both the US and European icons.

"To sell the idea of beautiful surroundings in Australia they also had to make the project useful. It wasn't enough that there was a



Food for the soul ... the Anzac Parade memorial and plans for Wynyard Square (below)



Photos courtesy of Robert Freestone

beautiful boulevard of trees to drive down in your carriage. It also had to solve a traffic problem and not cost too much. A lot of dream projects foundered on the issue of expense."

Robert, from the Faculty of the Built Environment, is looking at the civic landscapes that were created by this process and how we can best manage them. Well-known examples include Sydney's Anzac Parade and Hyde Park, Brisbane's Anzac Square and the University of Queensland, Perth's Forrest Place, and much of central Canberra.

"Remnants of the movement also exist at the local level - there are bursts of ceremonial plantings, attention to vistas, and

ordered symmetrical design inspired by City Beautiful ideas."

According to Robert the work of the movement has relevance for today's planners.

"Urban design in Australia is taking off now - seizing the public imagination. The early history of civic design in Australia is something we need to be aware of and can learn from."

Designing Australia's Cities (UNSW Press), has recently won awards from the National Trust and the Planning Institute of Australia. Robert is presently involved in a national study of planning historic landscapes for the Commonwealth Department of the Environment. ■

Art, science and a touch of murder

Mike Esson uses crimes scenes, not still life, to teach his drawing students technical and observational skills. By **Fran Strachan**



The art of murder

Photo courtesy of Mike Esson

that drawing should have varied applications in differing areas," he says.

Training plastic surgeons and recreating crime-scenes illustrates how drawing can be cross-disciplinary, blending seamlessly with medicine and forensic science.

Mike's position as Visiting Professor of Drawing at Lincoln University, UK, may result in the crime-scene drawing workshops being used by Lincoln's well-respected Forensic and Biomedical Science Department.

"My intention is to train investigators to look beyond the obvious and be speculative about the relationships between objects. This is also a way of training potential witnesses to reconstruct a series of events.

"The crime-scene drawing workshops aren't about creativity and self-expression. They encourage curiosity, speculation and interpretation. In short, the student becomes

This is far more interesting than just putting a bowl of fruit in front of them.

A masking-tape outline mimics the contorted limbs of the recently deceased. A handbag is nearby, contents strewn. Left over blood pools and congeals. A body bag has been zipped tightly to conceal its cold contents.

This isn't a scene from *CSI*, this is a winter morning in a COFA studio.

Traditionally, fine arts students have sketched the inanimate contours of apples and pears in still-life drawing classes to engage their technical and observational skills, but for COFA lecturer and Australian Director of the International Drawing Research Institute (IDRI), Mike Esson, a mock crime-scene achieves more dynamic results.

"I recreate a murder," the Scottish-born artist explains.

"The crime-scene drawing workshops encourage students to develop narratives, be speculative and investigate. This is far more interesting than just putting a bowl of fruit in front of them."

Mike taught his first crime-scene drawing workshop on the majestic front steps of the

Glasgow Art School in 2001. Intent on authenticity, he sourced real body bags from the US and crime tape from the local police department.

"All the locals thought there'd been a real murder," he says laughing.

Over the past seven years he has run courses in the modern foyers of Shanghai's high-rises and in a deserted mental asylum in Victoria.

Mike's fascination with mortality, anatomy and psychology has been lifelong. His own art is visual testimony to these preoccupations, featuring disembodied limbs, faces contorted with anguish and limbs with gaping flesh and exposed musculature.

It's precisely these interests that resulted in Mike teaching some of Australia's and New Zealand's leading plastic surgeons drawing and sculpture to help develop their perceptual approaches to surgery, both pre- and post-operatively.

"Both the IDRI and COFA believe that drawing shouldn't just be the activity of the fine artist. We're very conscious of the fact

the investigator."

Students are encouraged to choose one vantage point and draw the evidence from that angle. At the end of the workshop all the students' drawings are placed together to recreate the scene and the results are telling.

"How one student observes the scene can be quite different to the next. Every investigator has a different psychological perspective and this affects their approach to drawing the evidence."

Mike acknowledges that this makes drawing as equally prone to manipulation as digital imaging and photography but the time it takes to actually draw a crime-scene encourages honest observation and attention to detail.

However, Mike is realistic about the fact that crime-scene drawings will never replace cold, hard evidence.

"But they do act as a wonderful educational tool to encourage observation and this can only help in training forensic investigators," he says. ■



The discovery of dance ... Meryl Tankard
working with UNSW students

Dancing to the beat of her own drum

Meryl Tankard, internationally renowned dancer-turned-choreographer, recently completed a residency at UNSW's Io Myers Studio. Taking Norwegian painter Odd Nerdrum as inspiration, the work she created was filmed by her partner Regis and included a performance by a yoga practitioner. Her two-week residency was part of the Faculty of Arts and Social Sciences' community engagement with an innovative choreographic research and development centre known as Critical Path*.

By **Susi Hamilton**

Odd Nerdrum's work is quite classical and spooky, actually. I saw his work in Sweden and then I bought a book about it. I have done a lot of dance pieces and every time I do something I want a new challenge. It's always a struggle to try to be original even to yourself. I thought: "Is it actually possible to be inspired by this work and create a movement piece?"

I also wanted to work in the video medium, because when I create shows, you get great movements, but then sometimes it is hard for the dancers to repeat them. At least with video people can improvise - do something really spontaneously - and you catch it and it's there. It's a nice resource. We work a lot with Regis, who is a photographer, and we create sets from his projections.

Critical Path is great because we don't have to do a show. It's just really research and experiments, which allows us to expand. People in our industry don't get the opportunity to do that. If you are asked to do a piece for a company, you often have very limited time. You often can't choose the dancers. This helps me work with different people, like Craig, who is a yoga practitioner. I'm really interested in the movement, but I'm not sure yet what to do with it.

When I work it's organic, to a degree. I have an idea of a step, or a feeling, but I would rather ask the dancers to interpret that. I sometimes think that dance is so hard because you have no story, no words; you are always coming in with a blank page, which is really scary and daunting. Dance always starts with an emotion. What that is to other people, I don't really mind. The audience brings its own experience.

It is terrible that dance is ephemeral! That's why I want a video. You are in the audience one night and it is magical but it may never happen again. On another night, everybody does their steps right, everything is right, but you didn't feel anything. That always fascinates me - why is that? It is about the spirit among the people. There's also that incredible feeling about it being ephemeral - it's like food, you tasted it for that one night and that was it. You will never experience it again. It is precious.

**As part of the partnership between Critical Path and the Creative Practice and Research Unit in the School of English, Media and Performing Arts, another freelance choreographer, Sue Healey, will also take up a residency at the Io Myers Studio this year. ■*



Binge drinking and alcohol taxation

Health professionals could be forgiven for wondering if they are suffering from a kind of *déjà vu* hearing some of the recent comments from the alcohol industry in the wake of the decision from the Federal Government to lift the tax on ready-to-drink (RTD) products.

Some of the same squeals of protest were coming from the tobacco industry some 20 years ago.

This recent decision to raise taxes on RTDs effectively closes a loophole which has contributed to a 76 percent rise in RTD sales over five years, from 2002 to 2007.

Backed by results from the 2007 Household Survey, some commentators have suggested that this is an unwelcome solution to a problem that doesn't really exist - that is, drinking rates have not changed much in 20 years.

I would agree with half that statement.

That rates of risky drinking haven't changed much is exactly the reason why we should welcome the new focus on binge (or risky) drinking by young people, welcome the change in tax and encourage further steps in this direction.

The Household Survey tells us that one in every four of our 14 to 19 year olds have had a binge-drinking session at least once every month for the last 12 months. No matter if there has been no change for the past decade; I think the problem has gone on long enough without sufficient focus.

Add to that estimates that our 12 to 17 year olds - underage drinkers - consumed \$218 million worth of alcohol in 2005, of which \$73 million was from RTDs.

The National Drug and Alcohol Research Centre's (NDARC) study of young people's tastes and perceptions of alcohol revealed what we all intuitively know - young people's palates are attuned to sweeter drinks and they do not develop a taste for other, less sweet alcoholic beverages until they are older.

There is a wealth of evidence to support taxation as an effective policy approach to this issue. On top of the research evidence, it stands to reason that if you increase the price on a product, you will change the demand for that product. This is a proven economic theory called "price elasticity", but altering the tax (and therefore price) of one product will not be sufficient to tackle this well-entrenched problem.



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We are celebrating the gains made in reducing the rates of smoking - and rightly so - but we ought to remember the lessons of this chapter in public health history.

Taxation as it is applied to tobacco has increased, and is standardised. Sale of tobacco products is heavily restricted. Advertising is banned. There are even graphic warnings on every packet.

While tobacco and alcohol are very different products, the lessons are clear.

We don't just need to change the tax as it is applied to RTDs, we need to adopt the Prime Minister's call for "root and branch" change to alcohol taxation generally - moving to a volumetric tax. Maybe even hypothecating tax income to address problems associated with alcohol.

We don't just need a volumetric tax on alcohol - where the alcohol content is taxed, no matter what product it is - we need to look carefully at the "self-regulated" advertising of alcohol.

We don't just need to review advertising, we need to establish whether it is too easy for young people to get hold of alcohol and move to strengthen controls over its availability.

It is always possible to wage a war of statistics but the evidence is clear. The type of drinks our teenage girls are drinking has changed dramatically over the past five years. The taxation system is one way of pricing these products out of the reach of many young people.

Yes, they may drink other drinks instead, but let's remember that other drinks they may consume are lower in alcohol content. That's harm minimisation, that's lowering the risk and that is good.

NDARC is supportive of the move to focus on binge drinking and to look more closely at the taxation system as it applies to alcohol. We must remember that not so long ago, we were bemoaning the introduction of Random Breath Testing, and even seatbelts as a way of saving lives.

Sometimes, *déjà vu* is helpful. ■

Professor Richard Mattick is the director of the National Drug and Alcohol Research Centre in the Faculty of Medicine.