

ROAD

REVIEW

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*Linking Australian Science,
Technology and Business*

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Higher Education Review

The **Australian Government** is to hold a major review of Australian higher education, to report on the future direction of the sector. It will examine the sector's capacity to meet the needs of the Australian community and economy, and the options available for ongoing reform, widening access to higher education and improving student support programs so as to promote social inclusion and individual opportunity.

The review panel will examine the current state of the Australian higher education system against international best practice and assess whether the education system is capable of:

- contributing to the innovation and productivity gains required for long term economic development and growth; and
- ensuring that there is a broad-based tertiary education system producing professionals for both national and local labour market needs.

The panel will advise Government on possible key objectives for higher education in Australia, starting with the themes below, and how these could be achieved through reform of the sector and changes to regulation and funding arrangements.

Diverse, high performing institutions with a global focus – developing a diverse, globally focused and competitive higher education sector with quality, responsive institutions following clear, distinctive missions to provide higher education opportunities to students throughout Australia.

Productivity and participation – enhancing the role of the higher education sector in contributing to national productivity, increased participation in the labour market and responding to the needs of industry. This includes the responsiveness of the sector in altering the course mix in response to student and employer demand and an understanding of trends in the economy, demography and the labour markets served by higher education.

Effective and efficient investment – improving funding arrangements for higher education institutions as they relate to teaching responsibilities, taking into account public and private benefits and contributions to inform the development of funding compacts between the Australian Government and institutions.

Underpinning social inclusion through access and opportunity – supporting and widening access to higher education, including



participation by students from a wide range of backgrounds.

Enhanced quality and high standards – implementing arrangements to ensure that quality higher education is provided by public and private providers and that this is widely understood and recognised by clients of the higher education sector.

A broad tertiary education and training sector – establishing the place of higher education in the broader tertiary education sector, especially in building an integrated relationship with vocational education and training.

The review will consult with State and Territory tertiary education authorities and invite submissions from the sector and community. It will collaborate with and take account of the work of the Review of the National Innovation System and the Government's new skills advisory body Skills Australia. It will provide its report on priority action by the end of October 2008, and a final report by the end of the year.

Panel members are:

- **Emeritus Professor Denise Bradley** (chair), former Vice Chancellor **University of Adelaide**;
- **Mr Peter Noonan**, workforce consultant;
- **Dr Helen Nugent**, director of **Macquarie Bank** and chair of **Funds SA**; and
- **Mr Bill Scales**, Chancellor of **Swinburne University of Technology** and chairman of the **Port of Melbourne Corporation**.

The Minister for Education, **Julia Gillard**, says it is her intention

Continued page 2

that the recommendations of the review will build on the collaborative new approach to Government–university relationships embodied in the proposed mission–based compacts. These compacts will provide public universities with greater operating autonomy within a total funding envelope agreed on a three-yearly basis. The Government wants to encourage universities to pursue distinctive missions within a public reporting framework of mission–based goals, agreed outcomes and performance standards.

The Government has already announced that full fee–paying undergraduate places will be phased out in public universities for domestic students from 2009. To address the shortfall in critical disciplines, fees for new students studying maths and science will be reduced by approximately 50%. The Government has also promised to pay 50% of the HECS-HELP repayments of maths and science graduates for five years, where they choose to work in a priority maths or science related occupation, and to double the number of Australian Postgraduate Awards by 2012.

► **More information:** mediacentre.dewur.gov.au/mediacentre/Gillard/Releases/

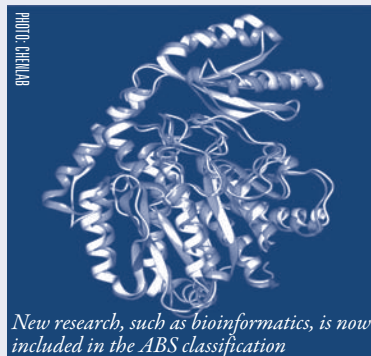
Tracked down

New research classification released by the **Australian Bureau of Statistics** (ABS) at the end of March will have a big impact on our ability to track investment trends in R&D, says the **Federation of Australian Science and Technological Societies** (FASTS).

The classification of Australian research was last reviewed in 1998 (Australian Standard Research Classification (ASRC)) but was criticised for being out of date and not reflecting modern R&D. The new Australian and New Zealand Standard Research Classification (ANZSRC) contains around 40% more categories than the 1998 classification, an indication of the rapidly changing nature of science. Areas of science have branched so significantly in the past few decades that categories that were not up to date meant that new research was falling through the cracks in quality and funding assessments.

According to FASTS President **Professor Ken Baldwin**, old categories meant that 32% of university R&D could not or was not allocated to specific codes, which meant that \$1.4 billion of the \$4.3 billion universities spent on R&D in 2004 were not adequately coded.

“Nanotechnology, quantum computing, carbon sequestration science, green chemistry, bioinformatics and agricultural biotechnology are a few



New research, such as bioinformatics, is now included in the ABS classification

examples of important research that are now included in the ABS classification,” he says.

The new classification will be used by governments, academia and the private sector and will be an important tool for defining disciplines for the Excellence in Research for Australia (ERA) initiative replacing the Research Quality Framework (RQF).

“Good data on R&D investment is essential to help institutions, funding agencies and governments better understand where research investment is happening and how that sits with institutional or national priorities,” says Professor Baldwin.

According to ABS the ANZSRC will also enable Australia to more easily compare homegrown research with R&D conducted overseas. The classification has been constructed in accordance with **OECD** guidelines and is aligned to the OECD’s Frascati Manual, which sets out standard practice for surveys of R&D, and the 2006 Fields of Science and Technology classification.

“The new classification is more closely aligned to research currently being undertaken in Australia and New Zealand and will enable greater accuracy in data collection and analysis, especially in emerging fields of research such as nanotechnology and climate change,” says The Minister for Innovation, Industry, Science and Research, **Senator Kim Carr**.

According to the Minister, a joint roadshow in Australian capital cities during May will raise awareness and understanding of the ANZSRC in the higher education sector.

► **More information:** www.abs.gov.au

Questions asked

Chair of the Review of the National Innovation System, **Dr Terry Cutler**, has invited submissions to the review panel to be lodged before 30 April 2008. The panel has released a paper that poses some key questions for consideration and comment as part of the submissions process.

The seven key questions posed are:

1. “Can we imagine a better world? Are we asking the right questions?”
2. “How do we solve the big challenges we face as a country, an industry or as a community?” (Outcome oriented research and inquiry is the only response to the big challenges confronting us as Australians and global citizens. How do we do this better? How do we increase business investment in innovation?)
3. “Could we do everyday things better?” (This question focuses our attention on creative problem solving; everywhere, by anyone. How can we continually increase value? This question invites us to build on our national ‘can do’ culture.)
4. “How do we get more firms and organisations to use the best available tools and techniques, from anywhere around the world, in what they do?” (This is about putting innovation to work. It addresses the diffusion of knowledge and techniques across whole industries and communities. Do we have the skills and training to take up this innovation challenge?)
5. “How do we make it easy for people to use tools or apply ideas in

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novel ways?” (This involves expanding on the work of others, so people need the freedoms to use and adapt other people’s tools or ideas. What are the barriers to adaptation and novel applications?)

6. “How do we educate and equip our people to be creative and innovative, life-long?” (This is about how we, as a country, build and nurture human and social capital. It is about building skills.)
7. “As a relatively small country, how does Australia prioritise its innovation efforts to make the most of what it has or can do?”

The review panel toured capital cities during March for discussions with stakeholders. It is reviewing the considerable amount of existing work and thinking on the subject, and initiating special workshops and roundtables on particular key issues for the inquiry. These workshops will provide an opportunity to solicit the contribution of domain experts in specific areas. It will also be promoting and supporting public forums with inspiring and informed thinkers to encourage robust discussion across the community.

In March, the Minister for Innovation, Industry, Science and Research, **Senator Kim Carr**, announced a comprehensive review of the Australian Textile, Clothing and Footwear (TCF) industries to be conducted by **Professor Roy Green**, Dean of the **Macquarie Graduate School of Management**, in consultation with an industry reference group. Its task will be to develop practical and effective strategies to ensure Australia’s TCF industries will be vibrant, innovative and competitive well into the future. The TCF review will have regard to the issues raised in the broader Innovation Review, especially ensuring that there are no impediments to the TCF industries benefiting from new technologies and innovation.

► **More information:** www.innovation.gov.au/innovationreview/Pages/home.aspx

Fostered future

Boeing launched its latest R&D arm, **Australian Phantom Works**, in March. **Senator Kim Carr**, Minister for Innovation, Industry, Science and Research, says that it is a great example of the innovative future the **Australian Government** is determined to foster.

Phantom Works will be built on a successful 20 year partnership between Boeing, the **CSIRO** and the **Defence Science and Technology Organisation**, he says.

The company plans to employ 30 scientific and engineering staff, which is expected to grow to 74 within four years. The operation will strengthen the links between local industry, researchers and global supply chains.

► **More information:** **Patrick Pantano, 0417 181 936, www.boeing.com/phantom/index.html**

Space case

The **Senate Economics Committee** has begun a review of Australia’s space science industry. Its terms of reference are to examine the current state of Australia’s space science and industry sector, examining options to strengthen and expand Australia’s position in fields that strongly align with space science and industry, giving consideration to any national strategic coordination requirements and taking into account findings and policy options of the National Innovation System Review, with particular reference to:

- Australia’s capabilities in space science, industry and education, including:



- existing Australian activities of world–class standard, and
- areas in which there is currently little or no activity but that are within the technical and intellectual capacity of the country;
- arguments for and against expanded Australian activity in space science and industry, including:
 - an assessment of the risks to Australia’s national interest of Australia’s dependence on foreign–owned and operated satellites,
 - the potential benefits that could accrue to Australia through further development of our space capability,
 - economic, social, environmental, national security and other needs that are not being met or are in danger of not being met by Australia’s existing space resources or access to foreign resources,
 - impediments to strengthening and expanding space science and industry in Australia, including limiting factors relating to spatial information and global positioning systems, including but not limited to ground infrastructures, intergovernmental arrangements, legislative arrangements and government/industry coordination,
 - the goals of any strengthening and expansion of Australia’s space capability both in the private sector and across government; and
- realistic policy options that facilitate effective solutions to cross-sector technological and organisational challenges, opportunity capture and development imperatives that align with national need and in consideration of existing world–class capability.

The committee will produce an interim report by June and a final report no later than October 2008.

► **More information:** **02 6277 3540, economics.sen@aph.gov.au**

Country care

The **Australian Government** will invest \$2.25 billion over five years on a new program to restore the health of Australia’s environment and build on improved land management practices. The Caring for our Country program will deliver funding to local communities through a simple, ‘one-stop shop’ covering the Natural Heritage Trust and the National Landcare, Environmental Stewardship and Working on Country programs.

The \$2.25 billion package is a new, coordinated approach to environmental management in Australia built on transparent and consistent national targets. Caring for our Country will be backed by an annual business plan to ensure the investment is targeted to deliver the best results for the environment. It will also cut excessive administration costs and instead allow more funding to be provided directly to farmers and other land managers.

The program will complement the \$130 million Australia’s Farming Future initiative. The Government will provide an annual report card on progress under Caring for our Country. The program will focus on the key goal of a healthier environment, which is better–protected, well–managed and more resilient against the challenges of climate change. It will invest in projects which match six national priorities:

- Australia’s national reserve system;
- biodiversity and natural icons (including weeds, feral animals and threatened species);
- coasts and aquatic habitats;
- sustainable farm practices and Landcare;
- natural resource management in remote and northern Australia; and
- community skills, knowledge and engagement.

The new program will deliver on key Labor election commitments including:

- the \$200 million Great Barrier Reef rescue plan;

- a strengthened Landcare;
- the \$50 million expansion of Indigenous Protected Areas;
- the employment of an additional 300 Indigenous Rangers;
- \$10 million to save the Tasmanian Devil;
- an extra \$2 million to fight the cane toad menace;
- \$100 million to protect and repair fragile coastal ecosystems; and
- \$5.25 million to improve water quality in the Gippsland Lakes.

Under a streamlined system, the World Heritage programs and others related to it will be overseen by the Minister for the Environment, Heritage and the Arts, *Peter Garrett*, and Landcare will be overseen by the Minister for Agriculture, Fisheries and Forestry, *Tony Burke*.

The regional natural resource bodies will remain central in delivering Caring for our Country, with a guaranteed share of program funds.

► **More information:** www.nrm.gov.au

Garnaut emissions

Professor Ross Garnaut has issued several more discussion papers as part of his Climate Change Review.

A paper discussing the development of low emissions energy technologies raises a series of questions regarding encouragement and support of R&D in this area.

They include:

- How can Australian governments improve policy clarity, continuity and coherence for businesses looking to invest in new energy technologies, or in other sectors with the potential to contribute to mitigation or adaptation?
- How will this be improved with the implementation of an Australian emissions trading scheme? What areas of uncertainty might remain?
- How can Australian governments avoid ‘picking winners’ while encouraging increased innovation? What is current best practice for technology neutral innovation policy?
- How can Australian governments balance the need for diversity and option value with the increasing returns from uniformity and specialisation?
- How can policy promote diversity without falling into the trap of needing to specify at a technical level what such diversity should include?
- What criteria, processes and institutional structures are most desirable for allocating funding to public good research?
- What types of reforms are needed to ensure that public funding is allocated to the most appropriate and highest-value uses?
- Are patents adequate for internalising knowledge spillovers from new abatement or adaptation technologies?
- Does coordination improve research outcomes and thereby outcomes for society?
- How can government create more cohesive research environments and promote genuine cooperation between rival firms or organisations? Is this a role for government?
- In what areas would coordinated international public good research be warranted?
- What are the appropriate institutional arrangements for shared public good research that will ensure the best outcomes at minimal administrative costs?
- How can governments encourage the diffusion of technology internationally without diluting the incentives for innovation?
- What has been the experience of innovators in Australia in transitioning from public to private funding? How can government

improve the transition process and reduce the capital shortfall for firms passing through the ‘valley of death’?

Another paper discussing options for an Emissions Trading Scheme (ETS) suggests that a carbon constraint will provide some clarity for investment decisions involving deployment of existing, lower-emission technologies. There is less agreement on the extent to which this clarity will facilitate increased expenditure on research, development and commercialisation of new technologies with the potential to deliver the major reductions in emissions that will be necessary in the longer term.

In the oil and gas exploration sector, the prospect of higher long-term fuel prices drives development of technologies with long lead times, high capital investment requirements and economics that work only under substantially higher price scenarios.

It is likely that similar activity will be triggered by the prospect of a rising carbon price over a substantial time period. Even in the absence of an ETS, research, development and commercialisation on and of technologies such as CCS, solar PV and geothermal is already being undertaken and will be significantly lifted by the introduction of a long-term carbon constraint.

► **More information:** www.garnautreview.org.au

Doing it big

The **Australian Academy of Science** has formed a **National Committee for Data for Science**. It has also initiated Australia’s membership of the international data science forum CODATA, the **Committee on Data for Science and Technology** of the **International Council for Science**, which works to improve the quality, reliability, management and accessibility of data of importance to all fields of science and technology.

For Australian science to maintain its position in the world, it is essential that Australian scientists are able to manage and analyse the increasingly large quantities of data, such as images of the early universe, sequences of genes, or surveys of minerals deep beneath the ground, using the best techniques available.

Infrastructure to enable this is being provided by the **Australian Government** under the National Collaborative Research Infrastructure Strategy. However, a collaborative approach is also required between scientific disciplines to help tackle the problem.

To promote and facilitate data science across all disciplines of science and provide a national data science voice that can represent Australia at international forums, the Committee will hold regular workshops, promote the development of data management policies and protocols, and promote the adoption of standards for data exchange.

Members of the National Committee for Data for Science are:

- **Dr Ray Norris** (committee chair), **CSIRO Australia Telescope National Facility**;
- **Ms Kim Finney**, Australian Antarctic Data Centre, Australian Antarctic Division, **Department of Environment and Heritage**;
- **Dr Rhys Francis**, **Australian eResearch Infrastructure Council**;
- **Dr Alex Held**, **CSIRO Division of Marine and Atmospheric Research**;
- **Professor Jane Hunter**, School of ITEE, **University of Queensland**;
- **Dr Tim Littlejohn**, Healthcare and Life Sciences, **IBM Australia**;
- **Mrs Karen Wilson**, **National Herbarium of NSW Royal Botanic Gardens**;
- **Dr Lesley Wyborn**, Information Services Branch, **Geoscience Australia**.

► **More information:** **Ray Norris, 02 9372 4416, www.codata.org**

By Kris Gale
MANAGING DIRECTOR, MICHAEL JOHNSON & ASSOCIATES PTY LTD

Under construction: help needed

The Federal Government's National Innovation Review (NIR) kicked off with a series of stakeholder meetings held around Australia in March. Ably guided by Dr Terry Cutler, the Review Panel confirmed that a specific working group had been established to look at the impact of taxation policy on innovation with a specific focus on the R&D Tax Concession.

Submissions are due by April 30, so I urge you to take the opportunity to have an impact on the design and delivery of Australia's flagship innovation program. Australian innovators, assemble! (Go to www.innovation.gov.au/innovationreview now. Go on! Okay, as soon as you finish this article.)

The review is welcome news as the concession has gone through its share of travails since the previous government cut the rate from 150% to 125% in 1996. Beyond the savage rate cut, the concession has added a lot of extra baggage in the last 10 years – feedstock offsets, planning requirements, offsets, incremental features – with a lot of attendant confusion.

Despite this, we have a program that has grown its user base to around 6,000 companies and has proven instrumental in supporting the reported growth in Business Expenditure on Research & Development (BERD) in recent times.

So when Senator Kim Carr, Minister for Innovation, Industry, Science and Research, suggests that we look at the program from first principles, I think it is reasonable to assume that the baby is safe, even if some of the bathwater is heading back to the national water table.

What principles, then, might one use in preparing a submission to the NIR Panel?

Last year, the Productivity Commission (PC) proposed some principles for reviewing government support programs for R&D – spillover and additionality.

These seem fair enough (though you will see I diverge from the PC's conclusions below) and I would add the following – size of benefit, simplicity and long-term stability.

I have the following brief observations to add regarding these factors.

1. *Size Of Benefit:* The Innovation Summit working group spent 12 months on this issue 8 years ago. The overwhelming consensus was that the 125% tax saving (7.5 cent in the dollar at current tax rates) is not enough. Lifting the rate to 150% (benefit of 15 cent) would get the concession back into company planning processes and budgets as the saving would be regarded as being significant.
2. *Simplicity:* The current legislation is too complicated. The incremental calculations are a minefield of the first order. Trust me. It doesn't keep advisers in a job. Complexity erodes user confidence in a program. Let's get the concession back to a simple and effective format that you can plan for knowing that you are entitled to receive the support if you do the R&D.

3. *Long-Term Stability:* Since it began, the one thing the program has held on to is an unchanged definition of R&D. There is massive cultural awareness and understanding of this definition. In returning to a simpler program, it is imperative that the current definition be retained.
4. *Spillover:* The PC contended that the highest rates of spillover pertain to radical innovations in proposing an incremental-only R&D Tax Concession. I see no evidence to support this. Companies are best at innovating, not inventing. Trying to attach them to a program with a scientific, as opposed to an industrial, emphasis is a mistake. Every time a skilled process engineer changes jobs, you get spillover just as effectively as with a scientist.
5. *Additionality:* This is where I have the biggest issue with the PC. It contended that the R&D Tax Concession should

We need to get the program out of the hands of the end-of-year tax accountants and on to the project approval templates of the technical managers.

be about funding work that otherwise wouldn't be done. In other words, it should target the marginal projects that were declined on the usual considerations of risk and return. So the PC says that the basic concession should be denied to companies as they would have done those projects anyway and the benefits should be confined to the increase in R&D as measured at the end of each tax year.

While having the incentive getting the marginal project over the line is a good thing, surely the issue is about the depth and quality at which you can carry out R&D on the projects that you were going to do – the non-marginal projects. Only by having a certain, effective rate of benefit known at the planning stage can companies take the R&D Tax Concession into account in their R&D activities. Project managers crave this. We need to get the program out of the hands of the end-of-year tax accountants and on to the project approval templates of the technical managers. Incremental programs don't get this done.

I hope that these preliminary thoughts inspire you into action. I'm happy if you simply want to shoot them down. The issue at stake is our innovation future. We should all be able to handle a bit of rough and tumble.

I look forward to reading your NIR submission. Remember, head to www.innovation.gov.au/innovationreview. Go now! Australia needs your help.



Ash for cash

It is time Australia stopped treating flyash from coal-fired power generation as a waste and started to regard it as a valuable resource with many end-uses, says **Professor Colin Ward** of the **CRC for Coal in Sustainable Development** and **University of NSW** after years of investigating the make-up of Australia's coal ashes.

"The content of potentially toxic trace elements in Australian coal ash is low by world standards and, of these elements, only a small proportion – about 20% or less – is actually mobilisable, says Professor Ward. "Many of our coal ashes are likely to be environmentally safe – and indeed desirable – for other uses." Australian flyash could be, contrary to common opinion, suitable for a range of valuable applications including improving acid or sandy soils, production of synthetic zeolites, as a solution to the intractable problem of acid mine drainage, and as backfill to stabilise former underground and open-cut mines. Professor Ward says that fly ash usually acts as a form of cement and could be used to produce concrete products and different types of aggregate. This would require less mining and burning of limestone for cement production, reducing related greenhouse gas emissions.

There is a need to update the regulatory environment so fly ash can be more widely used as mine backfill or in soil treatment, and also to resolve the issue of the transfer of long-term liability from one owner to others which is still an impediment to its use.

► **More information: Professor Ward, 02 9385 8718, c.ward@unsn.edu.au**

Last ship sailing

The final sailing south in the world's largest Southern Ocean climate experiment is underway. *Aurora Australis* has set sail from Hobart and is the last of 20 international research vessels deploying instruments in the Southern Ocean as part of an International Polar Year (IPY) experiment known as CASO, for Climate of Antarctica and the Southern Ocean.

The **Antarctic Climate & Ecosystems Cooperative Research Centre (ACE CRC)** is leading the voyage, which includes a team of researchers from the centre's partner organisations including the **Alfred Wegener Institute** (Germany) and the **National Institute of Water and Atmospheric Research** (New Zealand).

Scientists from 18 nations will be able to take a 'snapshot' of the

physical, chemical and biological state of the entire Southern Ocean for the first time, says voyage leader and ACE CRC program leader, **Dr Steve Rintoul**. A similar survey in 1990 as part of the World Ocean Circulation Experiment took nearly a decade to complete. According to Dr Rintoul, the IPY provides the chance to carry out a more comprehensive study in a single season.

Changes in the Southern Ocean circulation could impact on climate and biodiversity. The Southern Ocean acts by absorbing large amounts of carbon dioxide from the atmosphere and transporting it to the deep ocean. Recent studies, however, suggest the ocean may be becoming less efficient at soaking up carbon dioxide. "Our measurements of how much carbon dioxide is accumulating in the ocean and whether the ocean circulation is changing will provide a critical test of this hypothesis," says Dr Rintoul.

► **More information: Jess Tyler, 03 6226 2265, 0419 315 381**

Tiny measure

Australian scientists have developed a miniature radiation detector, the size of a human cell nucleus, which is designed to accurately measure the amount of energy deposited by ionising radiation within a human cell nucleus. **Australian Nuclear Science and Technology Organisation's (ANSTO) Dr Mark Reinhard** says the technology is significant for accurately measuring different kinds of radiation interactions with cells and for predicting the cancer-risk of radiation exposure.

"This new technology has significant potential in two important fronts: for air and space travel where radiation is complex; and for understanding the radiation dose people receive during cancer treatments, such as the revolutionary proton therapy which is yet to come to Australia." According to Dr Reinhard, the proton therapy is an emerging cancer treatment that is more accurate in dose delivery with reduced side effects, but more complex than conventional radiotherapy.

"This new micro-dosimeter is helping to understand the differences in these types of radiation treatments. Conventional detectors measure large volume radiation doses which helps predict the effect of gamma radiation on biological systems. But for other forms of radiation which are encountered in aviation or space environments, conventional detectors are not adequate," says Dr Reinhard.

The technology was developed in a collaboration between ANSTO, the **University of Wollongong** and the **University of New South Wales**, with the support of the **Australian Research Council**.

► **More information: Sharon Kelly, 02 9717 9575, 0400 394 085**

Telescopic links

CSIRO and its counterpart in Germany, the **Max-Planck-Gesellschaft**, have signed an agreement that formalises their commitment to work cooperatively on developing new technology for radio astronomy and will strengthen their cooperation over plans for the international Square Kilometre Array (SKA) telescope.

Australia and South Africa are both bidding to host the \$2 billion Square Kilometre Array, which will be the world's largest and most powerful radio telescope. Both CSIRO and the Max-Planck-Gesellschaft are involved in the planning for the SKA and the "pathfinder" telescopes being built to demonstrate SKA technology.

The Minister for Innovation, Industry, Science and Research, **Senator Kim Carr**, says that this collaboration will be valuable for both parties and will help strengthen global preparations for the SKA. "It will also strengthen Australia's chance of hosting the SKA," says Senator Carr.

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CSIRO's Australia Telescope National Facility operates three radio observatories in New South Wales, including the 64m Parkes radio telescope and the Australia Telescope Array at Narrabri. The **Max-Planck-Institut fuer Radioastronomie** operates the 100m Effelsburg radio telescope near Bonn, Germany, the largest radio telescope in Europe. Both Parkes and Effelsburg are key participants in projects that form networks of telescopes over huge distances. This technique of linking telescopes electronically will be very important in making the SKA work.

► **More information:** www.csiro.au/news/MediaCentre/whatsnew.html



Photo: Shaun Ayn, CSIRO
Parkes Radio Telescope

Itchy breather

Toddlers with eczema and a positive skin prick test for allergy are almost three times as likely to develop asthma than those with a negative test.

A study, led by the **University of Melbourne**, is the first to clearly demonstrate that skin prick tests can be used to assess how likely it is a baby or toddler with eczema will go on to develop asthma later in childhood. Researcher **Adrian Lowe**, from the University of Melbourne's School of Population Health, says that toddlers who have positive skin prick tests were found at much higher risk of developing asthma by the time they are seven, and also more likely to develop hayfever.

As part of the study, 620 Melbourne children with eczema were skin prick tested for allergies to cows' milk, egg white, peanut, house dust mite, rye grass and cat hair. Skin prick tests were conducted on the children at six months, one and two years of age. The children's allergy status was then followed up five years later when the children had turned seven.

According to Mr Lowe, the study, published in the international journal *Clinical and Experimental Allergy*, shows that skin prick testing may have benefits for the management of childhood allergies. "By identifying high risk children we can explore ways of avoiding potential allergens that could exacerbate their condition," he says.

► **More information:** uninews.unimelb.edu.au/articleid_5034.html

Branded threat

Murdoch University's Senior Lecturer in Marketing, **Dr Steven Ward**, has completed a study on the effect marketing plays when general practitioners and psychiatrists prescribe antidepressant medications.

As an area of great social and government concern, and the subject of

significant international debate, Dr Ward has examined how brand names influence medical practitioner choices.

"The use of a well promoted brand name may be an important evaluation 'shortcut' by both groups regardless of detailed training," says Dr Ward. "The prescription system is based on patients being prescribed the cheapest drug that helps cure the ailment - if we have a situation where people are getting drugs that aren't very different, but are more expensive, then that threatens the system."

Dr Ward's findings will be published in the US *Journal of Macromarketing*, examining the pros and cons of health systems in respect to controls on the marketing of prescription drugs.

► **More information:** www.murdoch.edu.au/News/

Size matters

Australian standards for child booster seats in cars need to be reassessed to allow for increasing rates of overweight and obesity in children, according to a study in the *Medical Journal of Australia*.

Researchers from the **Monash University Accident Research Centre** (MUARC) in Melbourne found that of 633 children aged 4-11 years who fell within the recommended height range for using booster seats only 29% were typically restrained in booster seats, and according to MUARC's **Dr Sjaamie Koppel**, 37% exceeded the maximum weight for booster seats stipulated by the current Australian safety standard, which may be an issue particularly in children aged seven years and older. It appears, says Dr Koppel, that in this age group for such children, even when they do not meet the minimum recommended height of adult restraint systems, seatbelts are the preferred mode of restraint.

Dr Koppel says that compared to seatbelts, the use of booster seats is associated with a significantly lower risk of head and spinal injuries, internal organ injury and lower extremity fractures for children aged 4-7 years. "We recommend that consideration be given to increasing the maximum child weight limit for booster seats."

► **More information:** www.ama.com.au/web.nsf/doc/WEEN-7CM4QJ

Cheap & rapid

A rapid new diagnostic test developed by **Sydney University** researchers will mean fewer tests and less trauma for cancer patients, says **Richard Christopherson**, a key member of Sydney University's Cancer Research Network. "The DotScan antibody microarray is a better diagnostic method because it gives you more information at a lower cost."

The test targets the unique 'signature' or 'profile' at the cell surface of each type of cancer, caused by the mutation underlying the uncontrolled growth. According to Professor Christopherson, in the case of leukemia current methods of diagnosis are based on cumulative information obtained by testing cell shape, cell staining properties, expression of surface molecules and chromosomal changes. "Our test provides an extensive profile of the surface of the cell, and that's enough to diagnose the cancer."

► **More information:** www.usyd.edu.au/news/83.html

Bad sleep

Australia's medicines regulator, the **Therapeutic Goods Administration** (TGA), has imposed a boxed warning in the product information documents for medicines containing zolpidem, including Stilnox.

The TGA action is to strengthen warnings of potential side effects of zolpidem, after reports of bizarre and sometimes dangerous sleep

related behaviours such as sleep walking and sleep driving in some users of the drug. These behaviours may have serious consequences for users of zolpidem, and it is important that healthcare professionals and the public are advised about these side effects. The TGA warning follows the decision of the **National Drugs and Poisons Scheduling Committee** not to restrict access to zolpidem by moving it from Schedule 4 (prescription medicines) to Schedule 8 of the Standard for the Uniform Scheduling of Drugs and Poisons (medicines subject to potential abuse or illegal use).

► **More information:** www.tga.gov.au/media/2008/080221stilnox.htm

Staying cool

Office air conditioning systems face collapse under the pressure of global warming unless steps are taken now to reduce both the internal and external heat affecting buildings, says **Dr Lisa Guan**, a **Queensland University of Technology** engineering researcher.

Commenting on results of her PhD computer modelling study, Dr Guan says that the risk of overheating in an air-conditioned office building is rising significantly if the outdoor temperature increases by two degrees. "The cooling load by air-conditioners will increase by up to 47% in some Australian cities, based on **CSIRO** projections of potential temperature increase due to climate change." She says that designing air-conditioning systems to cope with climate change has to take account of heat generated inside buildings as well as heat from the sun.

"For example, an adult male generates 140 watts of heat, and a woman 85% of that. Heat generated from lights, computers, printers and copiers all contribute to the internal load," says Dr Guan. "Cutting the internal load or heat generated inside the building will become as important as shielding buildings externally from the sun to reduce the future load on air-conditioning."

► **More information:** www.news.qut.edu.au

Some like it hot

A coral community in the southern inshore region of the Great Barrier Reef is showing signs of adjusting to higher sea surface temperature by quickly changing their dominant algal partners to types that can better cope with the heat. The process underlying this phenomenon is known as 'symbiont shuffling'.

Researchers at the **Australian Institute of Marine Science (AIMS)**

studied the *Acropora millepora* coral population near Miall Island, which is part of the Keppel group of 15 islands near Rockhampton. The study revealed that as a result of 'symbiont shuffling', which occurred after a bleaching event in 2006, the corals have now a much higher proportion of two more thermally tolerant strains of zooxanthellae, the single-celled algae living in their tissue.

"There has been a dramatic shift in the Miall Island coral's symbiotic community, mainly as a result of the change in the predominant algal types after

bleaching," says AIMS researcher **Ms Alison Jones**.

It is the heat tolerance of the algae that determines the fate of the corals they live with. When the tolerance threshold is reached, zooxanthellae may be lost, causing bleaching and often the death of the coral. However, there is a wide range of temperatures that can be tolerated by different kinds of zooxanthellae.

► **More information:** **Alison Jones**, 0408 068 128, a.jones@aims.gov.au

Living fossil

Tiny prehistoric ankle and ear bones of Australia's earliest known marsupial found have been directly linked to a little animal living in the southern rainforests of South America.

Djarthia, a primitive mouse like creature that lived 55 million years ago is possibly the ancestor of all the continent's unusual pouched mammals, such as kangaroos, koalas, possums and wombats.

According to a new study in the journal *PLoS ONE*, Djarthia is also a primitive relative of the small marsupial known as the Monito del Monte – or 'little mountain monkey' – from the dense humid forests of Chile and Argentina. While marsupials came to Australia from South America, the new finding suggests that the Monito del Monte may subsequently have returned to South America, and is now the last of a lineage that can be traced back to Djarthia.

The bones were collected from the Tingamarra fossil site near Murgon, in Queensland, and have been studied by a research team led by **Mr Robin Beck**, a doctoral student in palaeontology at the **University of New South Wales**, in Sydney.

The Monito del Monte is nocturnal and its agility and prehensile tail make it an excellent climber. Females carry up to five young in a well-developed pouch. Like Monito del Monte, Djarthia was a little larger than a mouse and its ankle bones show adaptations for climbing trees. It may also have had a similar diet as Monito del Monte: insects, other small invertebrates and some fruits.

► **More information:** www.science.unsw.edu.au/news/view-all/

Green citizens

A survey of more than 2000 households in Queensland, Victoria, NSW and South Australia has revealed that more than 75% of Australians want to reduce energy consumption in the home and implement a rapid response to climate change.

CSIRO's Energy Transformed Flagship has released a report looking at attitudes to household electricity consumption. The report considers people's willingness to accept alternative approaches to reducing domestic energy. According to **CSIRO** social scientist **Dr John Gardner**, the survey shows most Australians would like to find ways to curb electricity use in the home. "People want to reduce their household emissions as well as save on the cost of their energy bills," he says.

Introducing energy-saving technology like 'energy managers' – devices which automatically control power usage by household appliances, such as pool pumps and air conditioners – was seen by young, more educated and higher income households as an effective tool to help people reduce consumed electricity.

The report also found that Australians interested in generating their own household electricity prefer renewable energy sources, particularly favouring solar and wind.

► **More information:** www.csiro.au/news/MediaCentre/whatsnew.html



Monito del Monte



Acropora millepora

Australian research going global

The fact that Australia’s Prime Minister used his first speech in Brussels to draw attention to the existence of the Forum for European–Australian Science and Technology cooperation (FEAST) was extremely encouraging. As the Prime Minister noted, Europe is Australia’s major research partner, illustrated by the number of academic publications tracked adequately by Thomson publications data. Thomson is a key data source used to assess research performance, though it is limited in that the humanities and social sciences are not covered effectively. According to this dataset, the early 1990s marked a point of divergence between Australia’s research collaboration with Europe and the United States (Figure 1). There is no consensus view that explains this trend, and FEAST is now investigating it.

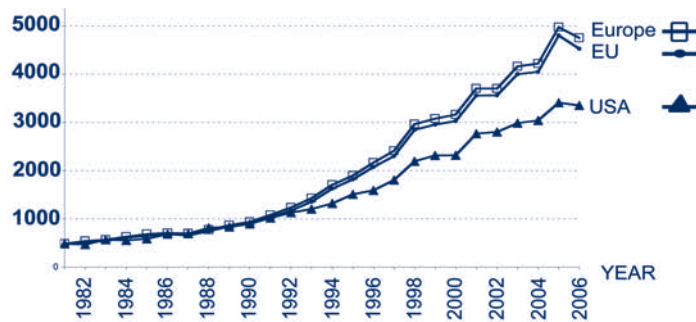


Figure 1: Australian Research Collaborations with European Union, Europe and USA as reflected in Thomson ISI tracked publications.
Source: Thomson data analysed by the ANU’s Research Evaluation and Policy Project

Furthermore, FEAST’s analysis reveals that most of the growth in Australia’s research publications is associated with international collaboration rather than purely domestic efforts. The output of purely domestic papers is growing by around 200 per year whereas papers with international authors are growing by roughly 600 per year (Figure 2).

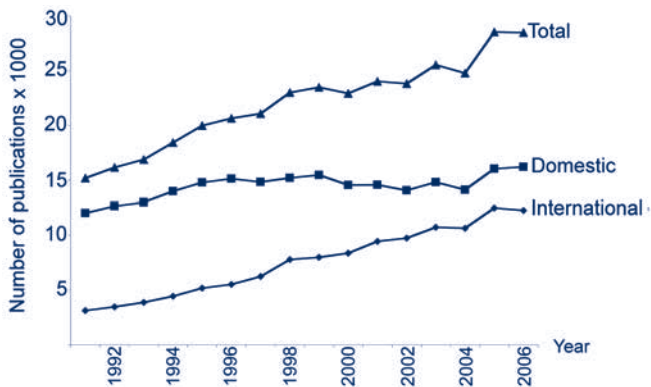


Figure 2: Number of publications by Australian researchers as tracked by Thomson ISI. Graph reflects the total number of papers (Total) or where either only Australian researchers were involved (domestic) or these were co-authors as part of an international collaboration (international).
Source: Thomson data analysed by the ANU’s Research Evaluation and Policy Project

FEAST has been monitoring these trends and examining the best practice strategies to support these developments. Our general conclusion is that academic-to-academic collaboration between Australia and Europe is going pretty well in the sense that collaboration is growing and is yielding useful results.

In regard to strategy and policy, we recommend that international

engagement should be treated as part of the ‘core business’ of doing research – not as an optional extra requiring targeted funding. From our perspective, the rules and regulations surrounding research funding that restrict scope for international collaboration are a key impediment preventing researchers from building these relationships. The reason is simple. Restrictions on the use of funding for travel and other costs of international collaboration limit the scope for conducting internationally engaged research. A more permissive approach to research funding would allow international collaborative relationships to be configured ‘bottom up’ in line with researchers’ collective aims.

Minister Carr’s recent announcement that the Australian Research Council will now be adopting a far more internationally engaged approach, involving a move toward truly global competition for funding for research to be performed in Australia, is therefore extremely welcome and commendable in its clarity of purpose. This aligns Australia with international trends in research policy – for example the new European Research Council (ERC) adopts a similar approach.

The overall result of these international trends will be that research will become more ‘borderless’ and better able to exploit synergies and avoid wasteful duplication. We are moving toward a global knowledge commons in which the nationality and geographical location of researchers will matter much less than the webs of global relationships in which these researchers are embedded.

... international engagement should be treated as part of the ‘core business’ of doing research – not as an optional extra requiring targeted funding.

These webs of often complex relationships will increasingly constitute the critical intangible ‘asset’, from which public policy will seek to obtain a social, environmental and economic pay-off. It is not hard to see that understanding and tracing the outcomes from spending on research and innovation is set to become far less about the direct benefits arising for a nation and region/city. By contrast, it will be far more about the ways in which each nation, region and city performs research as part of a wider network that contributes to global advances – advances that are then drawn upon in a more ‘customised’ manner to address specific national, regional and indeed city-based challenges and opportunities. *The generation of useful research outcomes is the product of a complex global system of research and innovation.*

This has profound implications for how we go about both appraising potential research projects and evaluating the progress and outcomes that past projects have generated. Policy-makers must stop searching for the holy grail of easily traced ‘smoking gun’ audit trails that link research to useful outcomes via simple domestic causal chains. They must learn to accept that research generates useful outcomes by a process that often cannot be traced in a simple manner, precisely because a complex, but far more powerful, system of cause and affect is at work on a global scale.

Readers interested in strategic approaches to intensified research and innovation engagement with Europe can access presentations from FEAST’s recent conferences in Melbourne and Sydney at:

www.feast.org/strategy2008/. *FEAST is funded jointly by the European Commission and the Australian Government and is hosted by The Australian National University on behalf of Australia’s research community.

Drug gateway

Corum Health Services has announced a joint venture to develop the first widely available system for electronically transmitting prescriptions between doctors and pharmacies. Endorsed by the **Pharmacy Guild of Australia**, ScriptX has the potential to dramatically improve patient care by improving the safety and efficiency of prescribing, while protecting patient privacy and choice of pharmacy.

The joint venture partners, **Health Communication Network Limited** and **Fred Health**, have worked with Corum to enable doctors to securely electronically send prescriptions to an encrypted hub for retrieval at a patient's pharmacy of choice, and provide a universal standard, so that all doctors, medical facilities and pharmacies throughout Australia can access ScriptX, no matter what software they use. The venture will preserve patient choice of pharmacy, observe all privacy laws and regulations, increase efficiency and reduce errors in transcribing handwritten prescriptions. In addition it will provide secure access codes for doctors and pharmacies and improve the handling of owing scripts and retrieval of repeat scripts.

"ScriptX is a major breakthrough, backed by substantial industry leadership and commitment towards improved patient health outcomes, through ongoing innovations designed to streamline and safeguard prescribing," says **Bill Scott**, chairman of Fred Health.

The Pharmacy Guild of Australia has pre-purchased 10 million transactions on the ScriptX gateway for Guild members to use at no charge. The ScriptX gateway is due to be launched Australia-wide by March 2009.

► **More information:** www.corumgroup.com.au/announcements.aspx?cid=16&navid=2

Understood dispute

The **Australian Communications and Media Authority (ACMA)** and the **Telecommunications Industry Ombudsman (TIO)** have signed a *Memorandum of Understanding* to further promote cooperation between the two agencies.

The MOU covers the exchange of information and advice about telecommunications consumer complaint investigations and the application of legislative and alternative dispute resolution remedies, the exchange of information about telecommunications and internet industry service and complaint trends and compliance and enforcement action related to membership of the TIO scheme.

"In a rapidly changing communications industry it is important for agencies such as ACMA and the TIO to be cooperating closely to resolve issues of concern to consumers and industry", says **Chris Chapman**, ACMA chairman. "While we each have our own responsibilities, there are strong points of intersection between ACMA's regulatory role and the dispute resolution role of the TIO. The TIO also provides us with a valuable source of data for the assessment of industry performance. The agreement acknowledges the importance we place on the maintenance of an effective and productive working relationship with the TIO." According to Mr Chapman, the ACMA is also working closely with the **Australian Competition and Consumer Commission**, with reciprocal membership agreements in place.

► **More information:** www.acma.gov.au/WEB/STANDARD/pc=PC_311019

Cyber fit

The **Rudd Government** has joined forces with its international allies and private industry to test Australia's response to a cyber terror attack.

Led by the **United States Department of Homeland Security**, Cyber Storm II did build on the first cyber storm exercise in February 2006 and involved the government and business sectors of Australia, Canada, New Zealand, the United Kingdom and the United States.

The international exercise involved simulated cyber and physical attacks targeting critical infrastructure, including the water, energy, IT, communications, banking and finance industries.

At the launch of Cyber storm II, Attorney-General **Robert McClelland** was pleased particularly about the significant role played by the private sector. According to Mr McClelland, strong cooperation between Government and business is essential in the fight against terrorism.

Cyber Storm II ran for five days in March and involved Australian Government agencies, the **South Australian Government**, the **West Australian Government** and over 50 private industry organisations.

► **More information:** **Adam Sims**, 02 6277 7300, 0419 480 224

Calling Google

Google and **Optus** have announced an enhanced strategic alliance that will provide Optus customers with easy access to information and video.

Google will now power Optus' web search on its consumer ISP portal myZOO later this year, enabling Optus users to easily search the web directly from their login page. This is in addition to Google already providing a search function to Optus customers via their mobile phone, representing an Australian first in dual platform delivery of Google™ searches.

Other parts of the alliance include the display of relevant text based advertisements, using Google's AdSense™ program, on the OptusZoo mobile portal and myZOO ISP portal. Optus' mobile customers will have quick and easy access through the OptusZoo mobile portal to YouTube™, Australia's most popular destination for online video, directly from their mobile phone.

Optus has over seven million mobile customers and 893,000 broadband customers in Australia (as of 31 December 2007).

► **More information:** **Rob Shilkin**, rshilkin@google.com, 02 9374 4091

Winner picking

Australia's peak industry body for digital and interactive content, the **Australian Interactive Media Industry Association (AIMIA)**, honoured the 21 winners of its 14th annual AIMIA awards at a ceremony held at Sydney's **National Institute of Dramatic Art**.

A judging panel of over 120 Australian and international experts from across the interactive media spectrum selected award winners from a high calibre of finalists, ranging from small businesses to larger, well-established organisations. According to AIMIA chief executive officer **John Butterworth**, numerous studies are showing the contribution of Australia's digital content creators to the economy and what they could achieve with the appropriate support.

► **More information:** www.aimia.com.au/i-cms?page=4240

By Simon Rowell
PRESIDENT OF THE LICENSING EXECUTIVE SOCIETY AUSTRALIA AND NEW ZEALAND

Wanted: Enterprising innovators

Australia and New Zealand are considered an international brains trust combining an intellectual capacity with an innate resourcefulness that is the result of geographic isolation and a culture of raw hard work.

In fact, Australia ranks in the top 10 OECD countries in 12 of the 18 indicators for R&D innovation but only accounts for 0.3% of the world's population.

Yet, while we create many wonderful ideas our track record in bringing these to the market is less than compelling. Why is this so? Part of the issue has been the relative immaturity of our financial infrastructure—our seed capital, angel investor, and venture capital markets appear more risk averse and have low deal flow compared to foreign markets. We also need to accept that the capital pool due to small populations will never compete with our western peers in Europe and the United States.

Yet perhaps a bigger, more readily addressable issue is that while innovation is often at the core of discovery, those same entrepreneurial qualities are lacking in many of our commercialisation ventures, and as a result inhibit the innovation process through to market.

Intellectual Asset Management is a discipline which Australian and New Zealand entrepreneurs and managers under utilise compared to their European and American peers. Intellectual Property (IP) is a strategic asset, yet all too often the IP management function is delegated away from the board of directors to technical managers or financial controllers - its apparent value diminished through its lack of attention at the highest management level.

In contrast, in other parts of the world, IP is considered the most valuable asset within the organisation and as a result an important consideration at board level. In the United States for example, it is common for companies to employ dedicated IP professionals whose sole role is to ensure the realisation of the strategic function of IP within the organisation – where titles such as Vice-President of Intellectual Property have become as common as that of CFO or Company Secretary. While Australasian organisations are beginning to recruit dedicated IP managers, their job description usually emphasises managing the IP spend and portfolio, rather than involvement and direction in the strategic planning process.

To realise sustainable commercialisation success in a global context, a shift in mindset is required. Businesses need to fully integrate their IP strategies with their business strategies, and nurture a culture where intellectual assets are seen as defining the future of the business and the technology future of their industry. This requires that participants of the innovation process in Australasia adopt a more entrepreneurial approach. Whilst the fallout of the Bond—era eighties and the dotcom nineties may have tainted views of 'entrepreneurship', skilled entrepreneurs who have a fundamental understanding of intellectual asset management are critical to the innovation process.

It often surprises people to learn that it wasn't Microsoft that first came up with the windows interface, but another organisation which had the idea but not the entrepreneurial culture to support its rapid development. Successful entrepreneurs have an uncanny, often innate ability to stay ahead of competition, identifying new opportunities well

in advance of the norm. More than just creating ideas, they are skilled in taking calculated risks to turn an idea into a market. Understanding that high risks can equate to high rewards, they analyse them nonetheless and develop strategies to mitigate them. They are aware of their own personal value added to innovation, yet acknowledge when it is required to recruit the right talent to take the innovation to the next level. True entrepreneurs understand their own limits from the outset and are similarly aware of an exit point from the get go – an understanding which must be mirrored by innovators themselves if they are to excel beyond the standards of our global counterparts in the US and Europe. Successful entrepreneurs also develop and implement strategies

to sell their compelling ideas to others, thus ensuring their vision becomes reality. It is this sales mentality which our local innovators must learn to adopt.

The role of entrepreneurship in commercialising innovation will be explored at the annual LESANZ conference in Melbourne from 17 – 19 April 2008, titled *Entrepreneurship and Innovation – not such Risky Business!*

The conference program features international speakers from the United States, Canada, China and Germany, who will share their innovation commercialisation case studies and experiences from much less risk averse business environments than our own.

LESANZ is the Australia and New Zealand chapter of the Licensing Executives Society, an international non-profit professional body whose members, as individuals worldwide, are actively involved in professional and business activities concerned with commercialising innovation, intellectual asset management, and transfer of technology and intellectual property rights. The organisation's objectives include providing a forum in which members can be educated in relevant professional and business issues, providing opportunities for members to meet and share experiences and learnings, and to inform the public, governmental bodies and international bodies on the economic significance of intellectual property commercialisation.

As large organisations around the world across many industries look to more nimble and creative smaller businesses as a source of new innovation, it becomes increasingly important for Australasian businesses to acquire skills in the field of licensing and technology transfer.

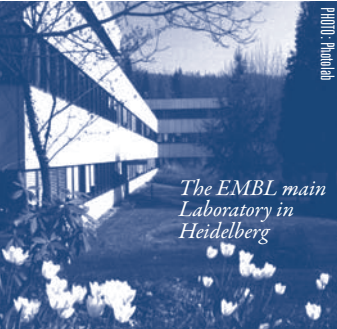
...in other parts of the world IP is considered the most valuable asset within the organisation and as a result an important consideration at board level.



Joining in

On 1 March 2008, Australia officially became the first associate member of the **European Molecular Biology Laboratory (EMBL)**, the leading European life sciences research organisation. EMBL is supported by 20 member states, has laboratories in Germany, France, Italy and the UK, and a staff of more than 1400 researchers from 60 nations.

Australia's membership has been made possible by funding through the National Collaborative Research Infrastructure Strategy and financial commitments from the **National Health and Medical Research Council, CSIRO, Monash University, The University of Sydney, The University of Queensland and The University of Western Australia.**



The EMBL main Laboratory in Heidelberg

► **More information:** www.go8.edu.au/news/2008/Go8%20March%20Newsletter.pdf

Tropical research hub

Queensland Premier **Anna Bligh** has opened the Sir Robert Norman Building at **James Cook University** in Cairns. The building houses the \$9.66 million **Australian Tropical Forest Institute (ATFI)**, which is a hub for Australian and international research and commercial development, based on the biodiversity of tropical forests.

ATFI conducts a high-profile research program together with the **CSIRO** in the Tropical Landscapes Joint Venture, focussing on research supporting the sustainable management of tropical landscapes, including the Wet Tropics World Heritage Area. The new **Australian Tropical Herbarium** is also located in the building. This research facility consolidates more than 160,000 plant specimens from the major **CSIRO Atherton Herbarium, Queensland Environmental Protection Agency's Mareeba collection and James Cook University's tropical plant collection.**

ATFI also houses the **Centre for Sustainable Indigenous Communities, Terrain Natural Resource Management Ltd, Earthwatch Institute's Rainforest to Reef Conservation Research Initiative, the Marine and Tropical Sciences Research Facility, and the North Queensland Climate Alliance.** The **Centre for Tropical Agri-Tech Research** conducts research in the Sir Robert Norman building, including work on non-invasive assessment technologies and the commercialisation of those technologies for use on farms.

► **More information:** **Linden Woodward, 07 4042 1007; 04 1979 1564**

Tassie partners

A new institute for marine and Antarctic studies will be developed under a new partnership agreement between the **Tasmanian Government** and the **University of Tasmania.** A series of research scholarships for exploring the potential of Tasmania's island culture is also among a range of initiatives as part of the partnership. The three-year agreement focuses on the priority areas of health, education, climate change, Antarctic and marine science and island culture.

The new institute will incorporate all existing university marine and Antarctic researchers into a single large body. The partners also aim to improve the commercialisation of Tasmania's public sector research and its contribution to the economy, and collaborate with business and

industry on climate change research to promote mitigation and adaptation strategies for the State.

► **More information:** **03 6226 2124**

Curtin partners

Curtin University has entered two new partnerships to increase its ability to assist local industry.

A \$10.5 million partnership with **Rio Tinto** is to develop an innovation centre for strategic research and development in materials and sensing in mining. Based at Curtin's Bentley campus, the **Centre for Materials and Sensing in Mining** will provide opportunities for Curtin's researchers and research students to enhance the most advanced mining systems in the world. The centre will collaborate with key research areas across the university and will include partnerships with a range of international research institutes.

An agreement with the **WA Chamber of Minerals and Energy** will help to develop the capacity of the minerals and energy sector to respond to the critical skill shortage in the resources industry. This agreement also promises sustainable strategies for all minerals and energy related programs with the **Western Australia School of Mines** being one of the main beneficiaries.

► **More information:** **Lisa Mayer, 08 9266 1930, Jane McMieken, 08 92661868**

Nutrition centre

A new **Centre of Clinical Research Excellence (CCRE) in Nutritional Physiology, Interventions and Outcomes** has been formed by experts from the **University of Adelaide, Royal Adelaide Hospital, CSIRO Human Nutrition, Hanson Institute** and the **Institute of Medical and Veterinary Science.** The CCRE is supported by a \$2 million grant from the **National Health & Medical Research Council (NHMRC).**

It has four main focus areas:

- diabetes (including the role of the gut in blood glucose control);
- obesity (fast food consumption, tools for obesity management in primary care, long-term effects of low-carbohydrate diets and other nutritional strategies to stimulate gastrointestinal satiety);
- nutrition in the elderly (nutritional, behavioural, and pharmacological interventions to reduce morbidity and avoid hospital admissions); and
- nutrition in critical illness (optimising gut function and nutrition in the intensive care unit).

The CCRE consists of eight chief investigators and several associate investigators, and is led by **Professor Michael Horowitz** of the University of Adelaide's School of Medicine.

► **More information:** www.adelaide.edu.au/ccre-nutrition/

Cancer research

University of Queensland researchers received a \$3.2 million grant from the **Australian Cancer Research Foundation (ACRF).** The ACRF funding will allow scientists from the university's **Diamantina Institute for Cancer, Immunology and Metabolic Medicine (DI)**, and their partners from the **Queensland University of Technology**, to buy the latest high-tech tools to help them discover genes linked to cancer.

"We will be able to sequence nearly a billion DNA bases per day, where before it took many months," says **Professor Tom Gonda**, who leads the Cancer Biology research program at the DI.

► **More information:** **Professor Tom Gonda 07 32402524**

Liking the lotion

Acrux, an Australian-based drug delivery company, has announced the results of a patient focused market research study conducted over the last six months in the USA. The research objective was to confirm and quantify benefits of Testosterone MD-Lotion and provide an objective, independent assessment of patient preference and potential product uptake.

The research involved the recruitment of 81 hypogonadal men who had been previously prescribed either gels or injections to treat their condition. Sixty three of the subjects used Testosterone MD-Lotion placebo for four consecutive days. The design was both qualitative and quantitative in nature, specifically evaluating in-use handling and application routine compared with existing treatments.

After trialling Testosterone MD-Lotion for four days, two thirds of patients indicated that they would prefer the Acrux product to their existing gel product. Three quarters of patients found that Testosterone MD-Lotion was better than their existing gel treatment in the time it takes to apply and in the time it takes to dry. Two thirds of patients found it easier to apply than their existing gel.

Overall, patients felt that Testosterone MD-Lotion delivered on several currently unsatisfied needs: it provided a convenient application process that could easily be incorporated in the daily grooming routine, simplified the application process and lowered total application time, significantly lowered the risk of transference of testosterone to others, reduced mess and was easy to clean up.

Acrux CEO **Richard Treagus** says: "The results confirm a compelling commercial proposition, addressing an unmet need in a large, growing market as we complete preparations to move into our pivotal Phase III trial by mid-2008."

► **More information:** www.acrux.com.au/IRM/content/default.html

Well suited

Australian Wool Innovation (AWI) has joined forces with India's largest menswear brand, **Park Avenue**, to launch a pioneering range of products into Asia and the Middle East using Australian Merino wool.

Park Avenue is one of India's premium lifestyle brands, presenting the market with the latest in international fabric, styling, colour and fashion trends. Park Avenue's latest Australian Merino wool collection includes a new machine-washable wool suit – due for release in retail stores across India in April 2008 – which meets the rising demand for quality 'easy-care' clothing.

The suit is the result of a joint product development initiative between AWI, and **Raymond Ltd**, one of the world's largest manufacturers of suiting fabric and owner of the Park Avenue men's label. Raymond Ltd has created a special finishing application for the suit, a wool/poly 60/40 blend resulting in the machine washable properties. This was followed by a selection of inter-lining using new garmenting technology to make it compatible with the wool/poly fabric.

Park Avenue is currently sourcing innovative knitwear products through AWI and working with three Hong Kong-based knitters. A range of mercerised, easy-care and easy-iron knitwear products are expected to hit the Indian market for the upcoming season later this year.

AWI is also working with Raymond Ltd on a high-performance travel suit which is under final development and expected to be launched through the Park Avenue label into retail stores later in the year.

► **More information:** woolinnovation.com.au/Media/page_7049.aspx

Diabetes trial

Phosphagenics Limited has received ethics approval to commence treating patients with Type 1 diabetes in a Phase II clinical trial using its patented transdermal insulin delivery system, TPM/Insulin.

Ethics approval was granted on the basis of data generated from previous trials and the first arm of the Phase II trial, which involved the treatment of patients with Type 2 diabetes. Phosphagenics had to demonstrate safety and the effective delivery of insulin into the bloodstream of patients with Type 2 diabetes prior to receiving ethics approval to commence a trial for patients with Type 1 diabetes.

The Phase II trial in Type 1 patients is due to commence next month and will be conducted at **QPharm** in Queensland, Australia, a well-established clinical facility.

The trial is a randomised, single-blinded trial which aims to assess the efficacy of TPM/Insulin. The results of this trial will be used to assist in obtaining an IND from the **FDA**. This will enable Phosphagenics to commence the next phase of its clinical development program for TPM/Insulin at the **Joslin Diabetes Centre**. It is anticipated that the US portion of the study will start this year.

"We have gathered the appropriate positive data to progress our Phase II study to the treatment of patients with Type 1 diabetes, which is the ideal patient population to prove the efficacy of our TPM/Insulin," says **Dr Esra Ogru**, executive vice president of research and development at Phosphagenics. "The Australian clinical trials conducted to date have demonstrated that our TPM/Insulin formulation can safely penetrate through human skin and deliver insulin into the blood stream over a sustained period of time without any adverse events."

► **More information:** www.phosphagenics.com/main/News_Releases.htm

HIV focus

Four additional mining industry companies from Australia and South Africa have recently joined the existing eight global mining companies already committed to funding the Southern Africa clinical trials of **Virax Holdings Limited's** VIR201 therapeutic vaccine for HIV/AIDS. The four companies are **African Rainbow Minerals Limited**, Australian based **Anvil Mining Limited**, **Assmang Limited** and Australian based **Paladin Energy Limited**.

As previously announced, a South African non-profit organisation has been established for corporate donors, who have significant operations and interests in South Africa and other African countries where HIV/AIDS is endemic, to provide funding for a Phase I/IIa trial in an emerging country environment. In effect, this has seen the formation of a global coalition of corporations to fight AIDS with contributions from four nations – Australia, Japan, South Africa and the United Kingdom.

The proposed trial will involve 140 HIV positive participants in five well established HIV clinics across four provinces in South Africa. Virax has lodged a Clinical Trial Application with the **South African Medicines Control Council** to conduct the trial.

VIR201 is a therapeutic vaccine based on stimulating the immune system, which is known to have shown a positive effect in suppressing virus levels in HIV infected patients in fully controlled clinical trials.

The project being managed by Virax has now secured commitments for 90% of the total funds required for the project. Virax is confident that the remaining 10% will be secured from other corporate donors and anticipates to achieve full funding for the Project during 2008.

► **More information:** www.virax.com.au

On track

pSivida Limited has announced that an independent Data Safety Monitoring Board (DSMB) has, after completing its review of safety and efficacy data currently available, recommended that the two pivotal Phase III clinical trials, known collectively as the FAME (Fluocinolone Acetonide in Diabetic Macular Edema) Study can continue under the current protocol, without change. The trial is studying the use of Medidur FA for the treatment of diabetic macular edema (DME).

FAME comprises two duplicate, double-masked, randomised, multi-centre studies that are following 956 patients in the US, Canada, Europe and India for 36 months in support of a planned global registration filing. Safety and efficacy are assessed after two years of follow-up.

The enrolment for the FAME study was completed in October 2007.

pSivida managing director **Dr Paul Ashton** says that pSivida remains on track to file an NDA for this product in early 2010. "Following the recent amendment to the licensing agreement with our development partner, we continue to have a significant financial interest in Medidur FA and other products developed under this agreement, without an obligation to fund the development of the products," he says.

Medidur, a tiny, injectable insert, is being studied for up to three years as a way to deliver fluocinolone acetonide, a corticosteroid, to the retina, as a treatment for diabetic macular edema (DME). Using a proprietary 25 gauge injector system, an eye care professional injects the Medidur insert into the vitreous through a minimally invasive procedure in an outpatient setting.

► **More information:** www.psvida.com/news/ASXAnnouncements.asp

Hot flush relief

Results of a three-year study demonstrate that standardised supplement of red clover isoflavones (Promensil) has a neutral effect on breast density in women with a family history of breast cancer. This contrasts studies showing that some conventional hormone replacement therapies (HRT) increase mammographic breast density. Mammographic breast density has consistently been associated with risk for breast cancer.

Alongside lifestyle changes, menopause experts recommend the use of Promensil (red clover isoflavone phytoestrogens) daily as a natural alternative to HRT, to help control hot flushes and night sweats associated with the menopause.

According to **Professor Trevor Poules**, consultant oncologist and lead investigator for the study carried out at the **Royal Marsden Hospital** and the **University Hospital of South Manchester**, the study results are reassuring for women, indicating that these phytoestrogens are unlikely to cause an increased risk of breast cancer. "This three-year study confirms similar findings from previous, shorter-term studies," he says.

Promensil has been shown to reduce frequency of hot flushes by 60%, in a randomised placebo controlled study in menopausal women. In addition, two systematic reviews and meta-analyses of all 17 randomised controlled trials (RCTs) of supplementation with red clover or soy isoflavones demonstrate a significant reduction in menopausal hot flush frequency with red clover isoflavone use, particularly in women with frequent flushes.

The study involved 401 healthy women with at least one first degree relative with breast cancer who received a standardised supplement of 40mg red clover isoflavones or placebo for three years in a randomised, double-blind, placebo-controlled trial.

► **More information:** www.novogen.com/

Thinner winner

Alchemia has received numerous enquiries from investors regarding the recent publicity concerning patient reactions to heparins and the recall of those products in local and overseas markets. Fondaparinux is the only drug in the heparin market which is not animal derived being completely synthetic, comprising a single purified chemical substance.

According to Alchemia's chief executive officer **Dr Pete Smith** numerous studies have found that Arixtra® (fondaparinux) offers superior safety and efficacy over both unfractionated heparin and low molecular weight heparins (LMWH) without the possibility of contamination. "We would expect that **GSK's** sales of Arixtra® will benefit from the adverse publicity surrounding its competitors and that this will increase the sales potential of our generic version," says Dr Smith. "Development of our product remains on track with the potential for approval before the end of 2008 and sales commencing early in 2009."

Adverse events such as anaphylaxis (acute allergic reactions) and low blood pressure have been reported in hundreds of patients who have received unfractionated heparin in the US. The **US Food and Drug Administration** has also reported over 20 deaths, several linked to the adverse heparin reaction.

Of the three currently available heparin classes, unfractionated heparins (heparin) and also the thereof derived low molecular weight heparins (LMWH), e.g. Lovenox®, are animal derived products, whereas Arixtra® (fondaparinux) is a completely synthetic compound. Whilst the contamination currently affects unfractionated heparin only, LMWH's are also under investigation.

The global heparin market is currently worth approximately US\$4.6 billion of which US\$400 million is unfractionated heparin, about US\$4 billion is LMWH, with the only currently available synthetic heparin, Arixtra®, earning about US\$200 million in 2007 – an increase of 87% over 2006 sales.

► **More information:** www.alchemia.com.au/irm/content/home.html

Increased benefits

Melbourne-based biotechnology company **Avexa Limited** has announced 48 week data from apricitabine's (ATC) Phase IIb clinical trial.

At week 48 the proportion of patients with HIV levels below detectable was over 90%. Patients who were initially treated with antiviral drug 3TC but changed to ATC at week 24 also improved their response after their switch to ATC. Avexa also reported that the CD4 cell count of ATC treated patients continued to increase out to 48 weeks. Patients initially treated with 3TC and then switched to ATC doubled their levels of CD4 cell count at week 48 (after 24 weeks of ATC) compared to their CD4 cell count after 24 weeks of 3TC.

The results indicate that clinical and immunological benefits of ATC continue to increase with long-term treatment out to 48 weeks, says **Dr Julian Chick**, chief executive officer of Avexa. "This is compelling evidence of the improvements that can be obtained when patients switch to ATC from 3TC."

No ATC resistance has been identified after 48 weeks of therapy. This indicates ability of ATC to withstand selection of HIV resistance, even in patients who have already failed other drugs, and differentiates it from some of the other HIV drugs in clinical use. Some patients on ATC reported no adverse effects at all during 48 weeks of therapy.

"These 48 week results clearly define ATC as a drug with huge potential both for drug-resistant patients in need of potent and safe new

HIV therapies and for patients whose regimen currently contains 3TC," says Dr Chick. "Replacing 3TC with ATC in a patient's regimen, even after optimization of the rest of the background regimen, could provide additional clinical benefit."

► **More information:** www.avexa.com.au/

Reducing inflammation

Biotechnology company **Arana Therapeutics Limited** has announced that it has commenced recruitment for a Phase II trial in psoriasis for its lead anti-tumour necrosis factor (anti-TNF) drug candidate ART621.

Anti-TNF's are a class of drugs used for the treatment of inflammatory diseases such as rheumatoid arthritis, psoriasis and Crohn's disease. ART621 works by blocking the action of TNF, which is involved in generation of inflammation.

The study is Arana's inaugural trial following the merger of **Peptech** and **EvoGenix** in August 2007. The study will provide repeat dose, pharmacokinetic, safety and preliminary anti-TNF efficacy data for ART621 in a psoriasis population. The results will also be used to inform the design of longer duration clinical studies in rheumatoid arthritis and other indications.

A Phase I clinical trial of ART621 completed in November 2007 showed the drug was well tolerated in healthy volunteers. Earlier pre-clinical trials recorded potency levels at least equivalent to a market-leading anti-TNF drug in an animal model of rheumatoid arthritis. ART621 was also shown to have design features that make it suitable for commercial production.

It is well documented that patients can develop a resistance to one antibody treatment, but respond to another. The list of indications that can be treated with anti-TNF drugs is increasing and there is also a trend developing in diagnosing and treating the inflammatory conditions at a much earlier stage.

The study ART621-201 is designed to evaluate the safety, efficacy and pharmacokinetics of three dose levels of ART621 using a randomised, double-blind, placebo-controlled design in subjects with plaque psoriasis. It will be conducted to ICH GCP standard at two Australian study centres – **Nucleus Network** in Melbourne and **CMAx** in Adelaide. The study expects to recruit between 40-60 subjects over a four to six month period.

► **More information:** www.arana.com/news_media.htm

Windy sale

Allco Finance Group (Allco), an Australian ASX-listed fully integrated global financial services business, has retained **Marathon Capital, LLC** to assist it in the sale of its global wind energy business, **Allco Wind Energy** (AWE). AWE owns, or has rights to, a portfolio of investments in wind energy projects totalling approximately 4,000 MW in the United States, Europe and Australasia. It further features one of the largest wind development projects in the world - the 3,100 MW Tehachapi project in California. AWE also has an established and recognised global team of 23 wind energy specialist staff with over 150 years of experience in originating, developing, constructing, financing and operating wind and energy projects.

Marathon has deep experience in the sale and recapitalisation of various types of wind development companies and will be working closely with Allco management on a process which is intended to lead towards a second quarter closed transaction. The Marathon engagement relates to Allco's US wind assets.

Commenting on AWE, **Ted Brandt**, chief executive officer of Marathon, says: "Allco Wind Energy's gigantic Tehachapi project in California is the Crown Jewel of the US and global wind industry. It is the largest single location development project available in the world today and is supported by a very conducive wind energy environment and the largest utility-backed wind energy Power Purchase Agreement in the US market. The successful acquirer of this vast and highly attractive project will gain an unrivalled renewables platform in California, the US's largest and most energy hungry state."

► **More information:** www.allco.com.au/home.aspx?m=2

eHealth going pacific

IBA Health Group Limited, an Australian listed specialist information technology company, has announced a contract with the **Ministry of Health** in the Kingdom of Tonga for a web-based hospital information system (HIS) valued at over \$670,000.

The agreement with IBA comprises initial licence and service fees of \$574,000 together with support and maintenance fees of over \$95,000 in the first year. The new system is being installed at the 190-bed **Vaiola Hospital** in Tonga's capital Nuku'alofa and is targeted to be fully operational by March 2009. Central to the new HIS is the company's web-based patient administration system (web-PAS), with modules for outpatients, inpatients, medical records, theatres, maternity, A&E, billing, and results reporting.

The solution, a key component of Tonga's Health Sector Support, will give doctors and other carers at the Vaiola Hospital, three district hospitals and outlying health centres and maternity clinics, point-of-care access to vital patient information. The web-based applications enable ready access to patient information. IBA's solution will also improve the Tongan Ministry of Health's capacity to collect, manage and use health information effectively to assist future decision making.

IBA is pursuing several opportunities in the Pacific region as preventative health and health promotion have become major priorities for island governments and world health organisations alike. The executive chairman and chief executive officer of IBA, **Gary Cohen**, says: "With an expanding regional presence which provides a unique understanding of the region's needs we are well placed to capitalise on these opportunities both from a geographic and technology perspective."

► **More information:** www.ibahealth.com/html/asx-announcements.cfm

Profitable neuro-expansion

NeuroDiscovery Ltd, a speciality neuroscience services provider and drug development company, announced that its 100% subsidiary, **NeuroSolutions Ltd**, has entered into a further agreement with a US pharmaceutical company.

Under the terms of the new agreement, NeuroSolutions will provide its specialist electrophysiology services to the US company for 12 months. The agreement is for a maximum of approximately \$1 million.

"In addition to expecting results from our clinical trials, currently underway for NSL-101 and NSL-043, the continuing expansion of our profitable services business in the US market is a key component to our future growth and this agreement marks another milestone for us in this respect," says **Dr Mark Treberne**, chairman of NeuroDiscovery.

For commercially sensitive reasons NeuroDiscovery is not able to name the pharmaceutical company.

► **More information:** www.neurodiscoveryltd.com/

Chinese inhalation

A clinical trial application for **Pharmaxis's** Bronchitol to treat bronchiectasis has been accepted for evaluation by China's **State Food and Drug Administration** (SFDA). All pharmaceutical companies are required to undertake a study in a Chinese population to support their marketing approval application. Approval of the clinical trial application is expected in the fourth quarter of 2008.

Preliminary market research indicates that the number of Chinese who suffer from bronchiectasis is more than double that in the rest of the world. Pharmaxis expects Bronchitol to be the first targeted medication for this patient group in over 20 years.

"China represents an outstanding opportunity for Pharmaxis," says Pharmaxis chief executive officer **Alan Robertson**. "A number of leading Chinese respiratory physicians have indicated they wish to conduct bronchiectasis studies, and have confirmed there is a large unmet need for new treatments for bronchiectatic patients.

"The cost of conducting clinical trials in China is significantly less than in other parts of the world, and the results of the trials can be used to support additional marketing applications throughout Asia Pacific and the rest of the world."

Bronchitol is being developed as a daily therapy for people with the currently incurable lung condition bronchiectasis. Bronchitol is administered by inhalation to the patient's lungs. Bronchiectasis is a degenerative and chronic lung condition that makes breathing difficult because of excessive mucus buildup in the lungs. Pharmaxis has the only product in Phase III clinical trials for bronchiectasis in the world.

► **More information:** www.pharmaxis.com.au

Increased stakes

Alimera Sciences and **pSivida Ltd** have amended their license and collaboration agreement relating to Medidur™ FA, the companies' Phase III investigative treatment for diabetic macular edema (DME), and other Medidur products.

Alimera is increasing its equity in the future profits of Medidur FA from 50% to 80% in exchange for consideration of up to approximately \$82 million (US\$78 million) to pSivida.

Consideration to pSivida includes an up-front payment of \$13 million (US\$12 million), a \$26 million (US\$25 million) milestone payment upon FDA approval of Medidur™ FA, other payments of up to approximately \$22 million (US\$21 million) by 30 September 2012, and assumption of pSivida's research and development funding obligations estimated at approximately \$21 million (US\$20 million).

Diabetic retinopathy (DR), a complication of diabetes mellitus, is the leading cause of blindness in the working-age population of developed countries. In the US, as many as 200,000 people are diagnosed with DME each year and an estimated 1,000,000 people suffer from DME. Currently there are no FDA approved drug treatments for DME.

► **More information:** www.psvida.com/news/ASXAnnouncements.asp

Affirmed vitamin

An independent panel of food safety experts have unanimously concluded that **Phosphagenics'** patented Phospha E* is Generally Recognized As Safe (GRAS). This comes as a result of the panel critically evaluating data and information pertinent to the use of Phospha E* in breakfast cereals, juice beverages and table fats.

Phospha E* is a patented derivative of vitamin E with superior qualities, such as greater absorption and activity. In pre-clinical studies, Phospha E*, when given orally, has been shown to lower blood cholesterol and triglyceride levels, inhibit the formation of arterial plaques and suppress the main inflammatory pathways involved in metabolic syndrome (a condition which markedly increases the risk of heart attacks, strokes and diabetes).

The Company is preparing a GRAS notification to inform the US **Food and Drug Administration** (FDA) of the expert panel's conclusion that Phosphagenics' Phospha E* is GRAS. If the FDA has no further comment, GRAS designation allows manufacturers to produce and sell foods that include Phospha E* in the US food industry.

"GRAS status extends the permitted use of Phospha E* beyond the nutritional supplement market and into the substantial US food industry, and represents a tremendous commercial opportunity for Phosphagenics," says **Harry Rosen**, Phosphagenics' president and chief executive officer.

► **More information:** www.phosphagenics.com/main/News_Releases.htm

Substantial base

For the second half of 2007, **IBA Health Group Limited** (IBA) has recorded revenues of \$102.8 million, up 183%, and an underlying EBITDA of \$25.4 million, up 60%, reflecting the two-month contribution from **iSOFT** which was acquired in October 2007. The underlying results are before integration, amortisation of intangibles and one off acquisition costs of \$18.2 million.

The integration and one off acquisition costs have impacted the reported six month result, producing a net loss after tax of \$1.2 million for the period. The combined business now has a substantial base of contracted and recurring revenues which will underpin future growth. Over 80% of FY08 revenues are contracted or expected, with recurring revenues of over 60%.

Integration of iSOFT into the IBA business is proceeding to plan with targeted cost synergies of \$27 million for FY09. \$16 million of annualised synergies have already been extracted. One off integration costs of \$6.5 million were incurred over the period of which \$3.4 million is reflected in this result.

IBA's net debt to total assets ratio, following the iSOFT acquisition, is 23%, with the majority of the debt funding of \$192 million secured through a four year facility with **ABN**, and \$90 million of contract financing, of which the majority unwinds over the next 18 months. An additional \$56 million of debt funding is provided by **Allco Equity Partners** (AEP). AEP is a separately listed company to **Allco Finance Group**. IBA's underlying cash flow position remains strong, and is expected to improve by over \$70 million per annum when the contract financing prepayment period comes to an end in April 2008. Consequently IBA is unlikely to require the previously announced additional \$50 million facility from AEP. A number of one off payments made as a result of the acquisition reduced net operating cash flow for the period.

► **More information:** www.ibahealth.com/html/asx-announcements.cfm

Happy together

Clinical Cell Culture Ltd and **Visiomed Group Ltd** announced that the **Federal Court** in Perth has given final approval to the schemes of arrangement between the two companies on 11 March 2008.

► **More information:** www.clinicalcellculture.com/one/05_01_news.asp

New centres

The **Western Australian Government** has announced support for six new research centres:

An **International Radio Astronomy Research Centre** in Western Australia was announced by Premier **Alan Carpenter**, which will boost Australia's chances of winning the world's largest radio astronomy project – the \$2 billion Square Kilometre Array (SKA).

Mr Carpenter says that he expects the initiative to be a collaborative joint venture and leverage significant contributions from research organisations and industry.

The centre will involve **The University of Western Australia, Curtin University of Technology, CSIRO**, research institutions and industry, along with significant involvement from other WA, national and international research institutions and industry partners.

The WA State Government will contribute \$20 million towards:

- the employment of up to 100 scientists and technicians to undertake radio astronomy research and development;
- purchasing and developing new software and technologies;
- developing radio astronomy-related industry capability in WA through employing scientists and engineers to work with local industry to design, develop and manufacture engineering solutions for SKA;
- undertaking public outreach and education programs; and
- creating domestic and international linkages and partnerships on SKA.

The State Government will ask research institutions and industry to work together to put forward proposals for the centre. "We would expect to see final proposals by July this year, with the centre up and running in 2009," Mr Carpenter says. A final decision on the location of the SKA is expected by 2012, with international scientists currently investigating the suitability of sites in both WA and Southern Africa.

A further five new major research facilities will be supported with almost \$10 million, including the:

- **Radio Astronomy and Engineering Centre of Excellence** (\$2.3 million);
 - **WA Geothermal Centre of Excellence** (\$2.3 million);
 - **Centre of Excellence for Climate Change and Woodland and Forest Health** (\$2.3 million);
 - **Centre of Excellence in Ecohydrology** (\$1.5 million); and
 - **Centre of Excellence for 3D Mineral Mapping** (\$1.5 million).
- **More information: 08 9222 9475**

Small the key

A new framework for the development of Victoria's nanotechnology sector has been released by the Innovation Minister **Gavin Jennings** at the opening of the 2008 International Conference on Nanoscience and Nanotechnology in Melbourne.

The Victorian Nanotechnology Statement provides a framework for a new strategic partnership between governments, industry and the research sector, focused around five priorities. They are:

- **Boosting Industry Uptake** – through industry-research clustering, product development capabilities and improving information and knowledge flow.

- **Responsible Development** – through regulatory frameworks and industry-designed and led protocols and addressing social and ethical issues through balanced and factual information and dialogue.
 - **Forging Global Connections** – through strategic alliances, boosting investment, export and brand promotion activities, and convening an international panel of experts to stimulate international business and research partnership opportunities.
 - **Skills and Education** – with a strong focus on developing vocational education and practical skills, creating a strong secondary and tertiary education nanotech curriculum and engaging the community and stakeholders.
 - **Building Platforms for the Future** – through protecting our ability to conduct basic research, utilisation of our research infrastructure by industry and coordinating research activity towards industry solutions.
- **More information: www.business.vic.gov.au**

Wet news

Adelaide will have two new water centres, a learning hub dedicated to educating South Australians about water and a new national headquarters for water quality research, which will be housed in **SA Water's** 6 Green Star headquarters in Victoria Square, to be complete in September 2008.

"The **State Government** will invest \$800,000 in building the water education centre and will offer \$350,000 a year in support to host the national research centre, called **Water Quality Research Australia**," says SA Minister for Water Security **Karen Maywald**.

The new national centre will conduct vital research for the water industry and consumers, such as the health and acceptability aspects of drinking water, management of toxic algal blooms, improving drinking water treatment technologies, water recycling, wastewater treatment and alternative water supplies.

The centre will carry on the work of the **Cooperative Research Centre for Water Quality and Treatment**, based in Adelaide for 13 years. It brings together major Australian water utilities, research members such as the **Australian Water Quality Centre** and universities, including the **University of Adelaide, University of South Australia** and **Flinders University**.

► **More information: www.ministers.sa.gov.au/news.php?id=2837**

Warm advice

The **Tasmanian Government** will legislate to reduce Tasmania's greenhouse gas emissions as part of a comprehensive new framework to tackle climate change. Premier **Paul Lennon** says that the Government will introduce legislation in the first half of this year, which sets an emissions reduction target for the State of 60% of 1990 levels by 2050.

The Bill will also establish a new **Tasmanian Climate Action Council** that reports directly to the Premier.

"This will be a high-level, independent council that will play a key role in monitoring and reporting on Tasmania's performance against its reduction targets," says Mr Lennon. "Respected environmental academic **Dr Kate Crowley** will be the inaugural chair of the council and other

members will come from science, industry, government and the broader community.”

The Premier tabled in Parliament Dr Crowley’s *Framework for Action for Reducing the Tasmanian Government’s Greenhouse Gas Emissions*. The six areas for action set out are:

- an audit of the Government’s greenhouse gas emissions;
- the design of a monitoring and reporting system for emissions;
- the setting of emissions targets for Government agencies;
- actions to reduce emissions;
- a program empowering Government employees to generate ideas for climate change action in their workplaces; and
- a process to evaluate and review climate change initiatives and programs.

► **More information:** 03 6233 6573

Innovative capital

ACT Chief Minister **Jon Stanhope** has launched a report on the *Study of the ACT Innovation System*. Mr Stanhope says: “The study identifies a number of areas where further improvements in innovation could bring about substantial benefits in the ACT, including sustaining economic growth and creating more high quality employment opportunities.”

Recognising the strong link between artistic endeavours, creativity and design in the innovation environment, the report highlights the comparative advantage that Canberra has due to its many national collecting institutions that can be used to further enhance capacity in the creative industries. The study will also provide information for the ACT’s participation in the **Australian Government** review of the National Innovation System.

Among its recommendations the report suggests:

- an entity, tentatively termed ‘Innovation Canberra’, be formed to provide leadership and direction in the development and implementation of knowledge-based innovation strategies for the ACT and surrounding region – with a particular focus on the ICT and the creative practices sectors;
- the ACT Government establish an ‘Ideas Fund’ to nurture innovative ideas and concepts to a stage of development where they become potentially marketable products and services and are of interest to customers and/or technology investors;
- the Epicorp incubation and enterprise development model be extended, in partnership with universities, research organisations, and national collecting institutions, into a **Canberra Innovation Development Centre** directed towards product development and scale up for technology and arts and creative businesses; and
- a program to support innovation strategy development in more developed and mature start-up firms – for example, program support to cover the cost of advice and mentoring to assist firms develop innovation management strategies and the organisational infrastructure pertinent to their business models.

► **More information:** Penelope Layland, 02 6205 9777; www.business.act.gov.au/__data/assets/pdf_file/0008/97415/Innovation_Report.pdf

Manitoba collaboration

Victoria and the Canadian province of Manitoba will collaborate on two new research projects in the fields of composite fibres and cancer treatment, under a *Memorandum of Understanding* signed

with Manitoba in 2006 to build strategic alliances between research institutions and biotechnology businesses.

The first project involves Manitoba’s **Composites Innovation Centre** and the Victorian-based **CSIRO Textile and Fibre Technology** and the **CRC for Advanced Composite Structures**. It will study opportunities for use of natural fibres in composites for building materials, furniture, boats, surfboards and semi-durable packaging such as crates and pallets.

The second, a joint project between the **Monash Institute of Medical Research** (MIMR) and the **Manitoba Institute of Cell Biology** (MICB) at the **University of Manitoba**, will use mouse genes to develop new approaches to study the role of the immune system in cancer development and progression.

The MICB is a partner in the North American Conditional Mouse Mutagenesis project, a large-scale research initiative that is building a library of mouse embryonic stem cell lines for identifying genetic factors in diseases such as cancer.

► **More information:** www.dpc.vic.gov.au

Medical research fund

WA Industry and Enterprise Minister **Francis Logan** has announced that WA medical research institutes and allied research hospitals could now become foundation members of the **Medical Research Commercialisation Fund** (MRCF).

The MRCF is a pre-seed investment fund dedicated to investing in early stage development and commercialisation opportunities emanating from Australia’s medical research institutes. It was established in June 2007, initially supported by the **Victorian** and **New South Wales governments** and by two leading superannuation funds, **Westscheme** and **Statewide**, each providing \$15 million over a 10-year period. Over 12 medical research institutes from Victoria and NSW are already members. According to Mr Logan, the **WA State Government** will contribute \$150,000 each year for four years towards the costs of managing the fund for WA institutes.

“The State Government strongly supports the MRCF as it directly aligns with our biotechnology industry development strategy, particularly in the area of building capacity and capability,” says Mr Logan. “Access to these new investment funds will help to encourage the commercialisation of biomedical research in WA and enable our research institutes to further develop and implement new therapies to treat health disorders.

► **More information:** Sharon Humphris, 08 9222 0439

On-lined up

A new online research and treatment database for cancer and other diseases – **BioGrid Australia** – has been launched. BioGrid Australia’s flagship project, the Australian Cancer Grid (ACG), has received \$11 million from the **Victorian Government** through the Victorian Life Sciences Statement Healthy Futures.

The ACG provides a resource of patient and scientific data linking Victoria’s cancer researchers, health professionals, cancer institutes and health services into one of the world’s largest cancer control networks. It is currently supporting a range of research programs across eight important tumour streams – brain, breast, colorectal, lung, melanoma, sarcoma, renal and rare tumours.

► **More information:** www.dpc.vic.gov.au



Ian Chessell



Ian Gould



Peter Rathjen

Chiefly appointment

Former Commonwealth Chief Defence Scientist and head of the Defence Science and Technology Organisation, **Dr Ian Chessell**, has been appointed as South Australia's new Chief Scientist. He succeeds outgoing Chief Scientist, **Emeritus Professor Max Brennan**.

Southern chancellor

Dr Ian Gould will become Chancellor of the University of South Australia in July, as successor to the current Chancellor **David Klingberg**. Dr Gould has had a long and distinguished career in the mining industry in Australia, holding top executive positions in companies such as Rio Tinto, Normandy Mining and Comalco.

He was president of the Australasian Institute of Mining and Metallurgy from 2004 to 2005 and has served as chairman of the South Australian Minerals and Petroleum Expert Group since 2006 and chairman of the Australian Institute of Marine Science since 2005.

Experienced leader

Professor Peter Rathjen has been appointed Deputy Vice-Chancellor (Research) in the University of Melbourne, where he is currently Dean of Science. He came to Melbourne from the University of Adelaide where he was Executive Dean of the Faculty of Sciences. A former Rhodes Scholar, Peter Rathjen has had extensive experience in university leadership, strategic planning, policy development and management, as a head of department and as a dean. He has first hand experience in the commercialisation of research.

Pioneering medallist

Dr Frank Ruess has been awarded the 2007 Bragg Gold Medal by the Australian Institute of Physics. Dr Ruess hopes to pioneer a new way to make atomic-scale electronic devices using the atomic resolution capability of the scanning tunnelling microscope. Based at the Centre for Quantum Computer Technology, University of New South Wales, he is working with colleagues in the Atomic Fabrication Facility under the supervision of Federation Fellow, **Michelle Simmons**.

Editor's favourite

Innovative gene research involving scientists from the University of Queensland has been honoured by leading scientific journals *Science* and *Nature*. **Professor Matthew Brown's** work with the Wellcome Trust Case Control Consortium on isolating genes that cause some of the most common hereditary diseases including diabetes and arthritis, has been selected as "Breakthrough of the Year" in *Science*

and an "Editor's Favourite" in *Nature*. The honour is recognition by the scientific journals that the research was some of the best to be published in 2007. Professor Brown was one of the principal investigators in the worldwide study that will allow researchers to pinpoint those most at risk from these diseases and could also help produce better treatments.

French connection

Charles Sturt University's (CSU) **Professor Shahbaz Khan** will take up a new role with the United Nations Educational, Scientific and Cultural Organisation (UNESCO). Professor Khan is currently director of CSU's International Centre for Water and regional coordinator of the Asia-Pacific office of UNESCO IHP-HELP. He will join UNESCO as chief of its section on Sustainable Water Resources Development and Management in Paris, France.

Algae taxonomer

Peter Gell has been appointed professor of Environmental Science and director of the Centre for Environmental Management at the University of Ballarat's School of Science and Engineering. Peter Gell is a palaeo-limnologist with particular interests in the taxonomy and ecology of diatom algae.

Danish delight

Electrical engineer **Dr Jan Ostergaard**, Newcastle University, has received the Danish Council for Independent Research's 'Young Elite Researcher Award' for his research into the complex operating systems used in the industrial, manufacturing and scientific sectors. He is a researcher in the University's Australian Research Council and Priority Research Centre for Complex Dynamic Systems and Control.

Sustainable chair

Former Victorian Deputy Premier and Minister for Environment, Water and Climate Change, **John Thwaites**, is the new chairman of the Monash Sustainability Institute (MSI). MSI is Monash University's key facilitating body fostering collaborative, cross-disciplinary research in sustainability. It will cut across a range of fields and disciplines: climate change, energy, water, biodiversity and transport. It will look at industry, urban and rural issues, and consider social, political and institutional issues as well as science and technology.

Northern light

Darwin meteorologist **Dr Andrew Tupper** will chair the Northern Territory's first independent Environment Protection Authority (EPA). Dr Tupper, who is currently acting as the NT regional director of the Bureau of Meteorology, will be joined by 3 other EPA Board members: **Professor Gordon Duff**,

Professor Donna Craig and **Ms Judith King**. The EPA will provide independent advice to Government on a range of environmental issues aimed at improving business certainty and environmental outcomes in the Territory.

Award winners

Winners of the inaugural Victorian Cancer Agency Awards are:

- **Associate Professor Ian Davis**, from the Ludwig Institute for Cancer Research – for his research on in-situ immunology and biology of urological cancers;
- **Dr Lara Lipton** from the Ludwig Institute for Cancer Research – for research into optimising the use of current treatments, and developing novel therapeutics, through greater understanding of the genetics of colorectal cancer development and prognosis;
- **Dr Kylie Mason** of the Walter and Eliza Hall Institute of Medical Research and Royal Melbourne Hospital, for research on the modulation of the apoptotic pathway to treat haematological malignancy; and
- **Dr David Thomas** from the Peter MacCallum Cancer Centre, for a comprehensive research program in adolescent and young adult cancer that will cover basic, translational and clinical research.

Weedy director

Professor Bob Martin has been appointed the first full-time director of the Primary Industries Innovation Centre (PIIC) at Armidale, New South Wales. Professor Martin will head Phase II of PIIC – a joint research venture between the NSW Department of Primary Industries (DPI) and the University of New England. A former weed scientist, Prof Martin has vast experience in managing research groups such as the Weed Science Branch of the WA Department of Agriculture and the Northern Farming Systems Unit of NSW DPI.

Resourceful appointment

Minerals resource expert **Mark Woffenden** has been appointed executive director of Curtin University of Technology's new Resources and Chemistry Centre, which is due for completion in 2009. Mr Woffenden is currently the director and chief executive officer of the Parker CRC for Integrated Hydrometallurgy Solutions (formerly the A J Parker Centre) that undertakes research for companies from the alumina, gold and base metals sectors. His 30 years' experience in the industry also incorporates key positions at KPMG Consulting and the Rio Tinto Group including Hamersley Iron Pty Limited and Comalco Aluminium (Bell Bay) Limited.



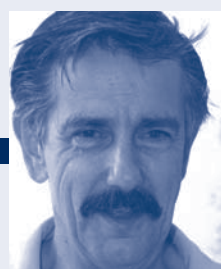
Matthew Brown



Shahbaz Khan



John Thwaites



Bob Martin



Mark Woffenden

Stashed away

Australia's first demonstration of geosequestration (also known as carbon capture and storage, CCS) was launched in early April by the Federal Minister for Resources and Energy, *Martin Ferguson*.

Situated near Warrnambool in south-western Victoria, the Otway Project will, over a period of one or two years, compress and transport 100,000 tonnes of carbon dioxide into a depleted natural gas reservoir two kilometres below the Earth's surface. The project was designed, developed and implemented by the **Cooperative Research Centre for Greenhouse Gas Technologies** (CO2CRC) involving researchers from Australia, New Zealand, the USA and Canada.

"The launch of the project has a very important role in demonstrating the technical and environmental feasibility of geosequestration to Australia and the world and preparing the way for its widespread application," says CO2CRC chief executive *Dr Peter Cook*. "Using an innovative geotechnical monitoring program, the CO2CRC Otway Project plays an important role in demonstrating the safety of geosequestration technology to communities, industry and governments world-wide."

According to Minister Ferguson, the success of this program will confirm the CCS technology as a viable option to reduce the carbon footprint of coal. "The Otway Basin Project is an excellent example of Australian innovation and of governments working in partnership with industry and research organisations to find ways of addressing the climate change challenge".

A carbon capture and storage company, **CO2CRC Pilot Project Ltd**, has been set up to manage the operations of the Otway Project on behalf of CO2CRC.

► **More information:** Carmel Anderson, 0418 461 250, www.co2crc.com.au

Clean deal

Australia and China have signed a formal international agreement for clean coal research. The agreement, between **CSIRO** and China's **Thermal Power Research Institute** (TPRI), will see TPRI install, commission and operate a post combustion capture pilot plant at the **Huaneng Beijing Co-Generation Power Plant** as part of CSIRO's research program.

Post combustion capture (PCC) is a process that uses a liquid to capture carbon dioxide (CO₂) from power station flue gases and is a key technology that can potentially reduce carbon dioxide emissions from existing and future coal-fired power stations by more than 85%. The pilot plant is designed to capture 3,000 tonnes per annum of CO₂ from the power station and begins the process of adapting this technology to evaluate its effectiveness in Chinese conditions.

► **More information:** Lou Morrissey, 02 4960 6140, Lou.Morrissey@csiro.au

Energy report

The latest report from the **Australian Bureau of Agricultural Resources and Economics** on energy, *Energy in Australia 2008*, records that around 6% of total R&D expenditure in Australia is devoted to energy R&D. In 2004-05, Australia's energy R&D expenditure was \$988 million.

Within Australia's energy R&D, mining and the extraction of energy resources have been growing in importance. In 2004-05, around 54% of Australia's energy R&D expenditure was directed at mining and extraction. Another 19% was directed at renewable energy and energy

transformation, while energy efficiency and conservation represented less.

The share of renewable energy R&D in total energy R&D expenditure increased from 3% in 1994-95 to 9% in 2004-05. This increase in renewable energy R&D is largely associated with funding from the business sector. The business sector funds 79% of total energy R&D in Australia and the proportion of renewable energy R&D funded by the business sector increased from 57% in 1994-95 to 80% in 2004-05.

► **More information:** www.abareconomics.com/publications_html/news/news.html

Atomic sieve

The **Australian Nuclear Science and Technology Organisation** (ANSTO) has been granted a patent in the US for its ion-exchange technology, which removes toxic radioactive and nonradioactive heavy metals from industrial processing solutions resulting from nuclear and minerals activities. The patent opens up commercial opportunities in the mining, chemical and nuclear industries to help manage toxic wastes, says *Dr Victor Luca*, inventor of the technology and research leader of ANSTO's project on Advanced Materials for Energy Applications.

"The invention can significantly improve the methods by which toxic waste is processed for either storage or recycling," says Dr Luca. "The technology is a metal oxide material containing atomic scale channels that are akin to a common kitchen sieve, which is where the analogy ends. These molecular sieves display such exquisite selectivity for certain metallic atoms that they can pluck them out of the most highly acidic solutions containing massive concentrations of other elements."

ANSTO is trialling the materials in partnership with industry and is keen to develop the technology for commercial use.

► **More information:** Sharon Kelly 02 9717 9575

Inevitable challenge

According to a new study released by the **CSIRO**, climate change is likely to transform many of Australian natural landscapes.

Dr Michael Dunlop, coauthor of the report *Implications of climate change for Australia's National Reserve System: a preliminary assessment*, says that "traditionally conservation has focussed on preventing change or restoring landscapes toward a pre-European state, but we now have to accept that change is inevitable, and it's happening quite fast."

He says that some animals and plants will be found in places where they have never been before, others will disappear from regions where they were once common.

"One increasing challenge will be deciding how to respond when native species turn up in new areas and threaten local species," he says.



The Golden Bowerbird is found in the tropical rainforests of north Queensland, and is particularly vulnerable to climate change.

The report provides an overview of the issues and identifies some possible ways forward.

► **More information:** www.csiro.au/resources/dunlopbrown2008.html

Worthwhile digging

Australia's commodity export earnings are forecast to increase by 30% to a record \$189 billion in 2008-09, according to the March quarter issue of *Australian Commodities*, released by the **Australian Bureau of Agricultural Resources and Economics** (ABARE). The report contains further commodity projections out to 2012-13.

According to ABARE executive director *Philip Glyde*, this mainly reflects increased shipments of iron ore, coal, gold, LNG, grains and oilseeds in response to strong demand in overseas markets.

In 2008-09, iron ore is forecast to be Australia's largest export commodity (in value terms), followed by metallurgical coal, thermal coal, gold and crude oil. Australia's largest agricultural export commodity (in value terms) is wheat, ranked 10th overall in commodity export earnings.

Over the medium term, the value of Australian commodity exports (in 2007-08 dollar terms) is projected to fall to \$176 billion in 2012-13.

► **More information:** www.abareconomics.com/publications_html/news/news.html

Missing expertise

The science of taxonomy – the art of discovering, describing and naming life – is in peril in Australia according to a proceedings paper released by the **Federation of Australian Scientific and Technological Societies** (FASTS) in March.

The paper states that the majority of Australia's current capacity to identify organisms rests with scientists who are either retired or approaching retirement.

"If the taxonomic capacity of Australia is not corrected, we really could put in jeopardy environmental governance, not only in terms of achieving conservation and development outcomes but also the safeguarding of Australia's natural and rural systems," says *Associate Professor Beeton*, chair of the **2006 National State of the Environment Committee**.

"Australia needs to train six to ten graduates each year for at least a decade to stop the erosion of our capacity and stabilise our national capability in taxonomy," he says.

The paper and an action plan were coordinated by the Australian Biological Resource Study (ABRS) in the **Department of Environment, Heritage and the Arts** and FASTS following a National Taxonomy Forum in October, 2007.

► **More information:** *Bradley Smith* 0408 511 261; www.fast.org

In the woods

Murdoch University will host a new research centre focused on addressing woodland and forest declines and ecosystem restoration in Western Australia. The new **State Centre of Excellence on Climate Change and Woodland and Forest Health** will receive \$2.3 million over five years from the **WA Government**.

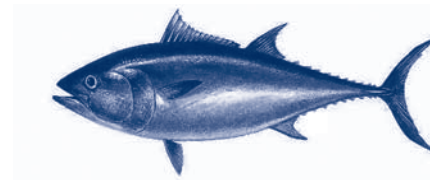
The centre will bring together researchers from Murdoch University, **The University of Western Australia** and the **Department of Environment and Conservation** to tackle major issues affecting woodland and forest ecosystems in Western Australia. The centre will have collaborative links with other universities and organisations in the US, Canada, South Africa, Italy, and China. Its four main areas of research are:

- climate change, tree, woodland and forest declines;
 - decline ecology;
 - policies and action for woodland and forest restoration; and
 - restoring biodiversity values.
- **More information:** www.murdoch.edu.au/News/View/?article_id=26161

Clean breed

The world's first artificial breeding regime for Southern Bluefin Tuna (SBT) has been developed by Australian company **Clean Seas Tuna Ltd.**

SBT sperm and eggs were collected from captive tuna held within a purpose-built land-based breeding facility at Arno Bay in South Australia. The company has further reported the hatching of live and active tuna larvae, which, if undergoing a complete lifecycle of SBT, could enable sustainable production of this commercially valuable species. Southern Bluefin Tuna is classified as critically endangered on the **IUCN Red List of Threatened Species**.



The only known natural breeding area for the fish is in the Indian Ocean south-east of Java.

Clean Seas chairman *Mr Hagen Stehr* says that from a global perspective, successfully recreating the natural breeding cycle of one of the world's premier pelagic fish species is a critical step towards ensuring sustainability of this key species at a time when wild stocks are under significant pressure.

► **More information:** *Tim Hughes*, 08 8412 4100, 0417 788 891

In unison renewable

The process of bringing together State and Federal renewable energy targets is well underway following the second meeting of the **COAG Working Group on Climate Change and Water** in Sydney.

COAG will now consider an implementation plan to deliver the new national expanded Renewable Energy Target by 2009. According to the Federal Minister for Climate Change and Water, *Senator Penny Wong*, a nationally consistent renewable energy target will stimulate much needed investment in clean energy to reduce greenhouse emissions.

The national scheme will include a legislated target of 45,000 gigawatt-hours of renewables-based electricity in 2020. This will ensure 20% of Australia's electricity supply will be sourced from renewables by 2020.

The Working Group also considered harmonising State feed-in tariffs for solar and other renewable energy technologies, proposing the preparation of an options paper on a nationally consistent approach to feed-in tariffs for COAG by the end of June.

Senator Wong says action on energy efficiency was also well underway, with a scoping exercise involving current and planned energy efficiency measures across jurisdictions being undertaken, as well as an evaluation of successful international programs that could be applied in Australia.

The COAG Working Group on Climate Change and Water is comprised of officials from all Australian Governments and is chaired by Senator Wong. The inclusion of Federal Ministers in the working group process was a key outcome of the **Rudd Government's** first COAG meeting in December 2007.

The working group will report on its progress to the COAG meeting on 26 March.

► **More information:** *John Olenich*, 0408 841 850, www.environment.gov.au/minister/wong/2008/pubs/mr20080306.pdf

AUSTRALIAN JOBS	INSTITUTION	CLOSING DATE
Chief Executive Officer	CAST Cooperative Research Centre QLD	30 Apr
Research Fellowship in Electron Microscopy	Monash University – Science QLD	30 Apr
Electronics Engineer	CSIRO Marine and Atmospheric Research TAS	28 Apr
Alexander Rubinov Professor of Mathematics	University of Ballarat - Mt Helen Campus VIC	30 Apr
Oceanographic Research Assistant	CSIRO Marine and Atmospheric Research TAS	02 May
Senior Lecturer / Associate Professor in Periodontology	Griffith University QLD	18 Apr
Primary Health Care Research, Evaluation and Development Coordinator	Uni SA - Spencer Gulf Rural Health School SA	14 Apr
Research Associate - Nano-Optical Sensor Technology	QUT – Physical & Chemical Sciences QLD	29 Apr
Associate Professor/Senior Lecturer/Lecturer	Uni A, School of Civil, Environ. & Mining Engineering SA	16 Apr
Research Fellow - Biodiversity	Griffith University QLD	07 May
Post Doctoral Fellow - Natural Gas Processing	CSIRO Petroleum Resources VIC	30 Apr
Fellow / Associate Fellow - Applied Statistics	University of Wollongong - Health Service Develop. NSW	20 Apr
Principal Scientist - Lamb Production	VIC Government - Department of Primary Industries VIC	21 Apr
Lecturer in Human Movement	University of South Australia - Health Sciences SA	22 Apr
Spatial Hydrologist	CSIRO Land and Water NSW	15 Apr
Research Scientist - Phytonutrient Biochemist	CSIRO - Food Science Australia (Joint Venture) QLD	16 Apr
Science Leader-Principal Research Scientist - Biomedical Imaging	CSIRO ICT Centre QLD	31 May
Research Engineer Biomedical Imaging	CSIRO ICT Centre QLD	20 Apr
Senior Research Fellow - Advanced Manufacturing	Uni SA - Mawson Institute for Advanced Manufacturing SA	21 Apr
Post Doctoral Research Fellow (Mental Health Nursing)	Flinders University - Nursing and Midwifery SA	21 Apr
Research Fellow - Computer Science	ANU - Engineering and Computer Science ACT	01 May
Principal Research Scientist - Dairy	VIC Government - Dep of Primary Industries VIC	21 Apr
Project-Graduate Metallurgist	CSIRO Minerals QLD	20 Apr
Molecular Immunologist	CSIRO Livestock Industries VIC	30 Apr
Research Fellow/Senior Research Fellow in Sustainable Grasslands	University of Sydney - Agriculture NSW	04 May
Project Coordinator - Solar Thermal Projects	CSIRO Energy Technology NSW	14 Apr
Associate Lecturer / Master of Science Coordinator	University of Wollongong - Science NSW	20 Apr
Senior Lecturer/associate Professor, Mental Health	Flinders University - Centre for Remote Health SA	14 Apr
Lecturer in Sociology	Australian National University - Arts & Social Sciences ACT	08 May
Researcher - Inst. Analysis Heterodox Economics & Environmental Policy	CSIRO Sustainable Ecosystems ACT	20 April
Livestock Production and Landscape Systems Scientist	CSIRO Livestock Industries WA	18 May
Structural Geology / Tectonics Lecturer	University of Melbourne - Earth Sciences VIC	14 May
Deputy Director - Health Services	Uni Wollongong - Centre for Health Service Develop. NSW	20 Apr
Senior Fellow (Palliative Care)	Uni Wollongong - Centre for Health Service Develop. NSW	20 Apr
Lecturer in Soil Microbiology	University of Sydney - Agri, Food & Natural Resources NSW	04 May
NEW ZEALAND JOBS	INSTITUTION	CLOSING DATE
Researcher/Senior Researcher in Health Services Assessment Collaboration	Uni of Canterbury - Health Sciences Centre South Island, NZ	20 Apr
Seismic Interpreters	GNS Science Limited NZ	30 Apr
Kaupapa Māori Psychology Lecturer	Massey University - School of Psychology NZ	5 May

More information on these positions: www.sciencealert.com.au/jobs

By Gerd Winter

Vision for a smart future

In most leading OECD nations science and industry are understood as partners fundamental to economic well-being and prosperity. For many in Australia, however, science and commercial enterprise still form an odd couple. Professor Peter Andrews, the current Chief Scientist of Queensland, has spent much of his professional life trying to change all that.

His involvement with industry started off in the mid 80s, when he took part in the development of Zanamivir - now licensed by GlaxoSmithKline as 'Relenza' - the first-in-class inhibitor for the treatment and prevention of influenza, and the first major success of the drug company Biota. CSIRO's Peter Coleman had identified a highly conserved active site on the otherwise highly variable viral surface-enzyme Neuraminidase. However, he failed to convince international pharma companies to invest in developing a universal influenza drug, widely regarded as impossible. The turning point was when Alan Woods, a Sydney angel investor, became interested and invested in the project - "in a very selfless way," as Andrews says. Woods, Coleman and Andrews, then Dean of Chemistry at the Victorian College of Pharmacy, committed to designing an inhibitor targeting the conserved Neuraminidase site, which was then carried out by Mark von Itzstein, who had come to the College as a postdoctoral fellow in 1986.

The commercialisation of research back then, however, "happened in the context of a community at large on either the research side or the business side that was far from entrepreneurial," says Andrews, adding: "That has very slowly changed."

Andrews has been at the forefront of this change, particularly in Queensland, where he moved, first to the private Bond University and then, after bankruptcy of its founding sponsors, to the University of Queensland. There he started the Centre for Drug Design and Development, with the vision to "bring together different scientific disciplines,... intersect with industry and create companies." He found strong backing by the entrepreneurially minded Vice Chancellor Brian Wilson but considerable opposition within the faculty. That is different now, he says, adding: "...there is a complete recognition now among academics and across the campus that commercialising their research or otherwise ensuring that their research reaches an outcome is not only what they should do but is what they want to do. And that is quite a dramatic change to Australia 15 years ago," he says.

But while researchers increasingly embrace entrepreneurship, industry may have not followed suit. "I don't think that industry is yet as ready for that interaction as it should be. Many sectors in industry have a limited understanding of what R&D could do for them, how it might help them to become more competitive."

In 2000, he and John Mattick started the Institute of Molecular Bioscience (IMB), a multidisciplinary research centre, which in partnership with its commercial arm, IMBcom, became an important driver in Queensland's effort to build a knowledge-intensive industry base, facilitating to date the creation of 11 biotechnology companies.

Andrews, appointed QLD chief scientist in 2003 and awarded an Officer in the Order of Australia in 2004, sees this as just the start of a long-term process: "We need to use our research institutions more

effectively to provide a starting point for new innovative industries and to generate more competitive outcomes in existing industries," he says. Australia has to focus on areas where it can make a difference. Initiatives like the Queensland Smart State Council have been effective in advising on, for example, obvious opportunities for Queensland to deliver products and services to an economically rapidly advancing tropical world. Australia has an extraordinary research base in those areas but has not yet established necessary linkages to industry.

"Where is the tropical Monsanto coming out of Queensland? The linkages are simply not there yet....," he says.

Pointing to a problematic low business investment in R&D, he says that Australia's wealth in resources has led to a climate in which private or public investors have tended to focus on extracting maximum value from natural resources. But he notes that the Queensland Government has developed a vision to invest in things that matter, such as building smart industries, reducing the number of people dying from preventable diseases, and reducing greenhouse gases. "If you put these long term goals in place and make the needed investments ...then I think we will follow down a path like Finland," he says, commenting that Finland was extraordinarily effective in transforming its economy, once reliant on the timber industry, by investing in education and R&D at much greater levels than other nations.

Better communication between research and industry can be facilitated by supporting researchers to work with companies and industry managers to teach in universities. IMBcom introduced boot camps for PhD students in their 2nd or 3rd year to talk about the potential to commercialise their research. "A lot of these PhD students came kicking and screaming, but after two days they often realised that this was their opportunity to make a difference."

He urges, however, the need to put in place the mechanisms to provide both the leverage for increased investment and, in parallel, mechanisms for much higher quantity and quality of science & engineering graduates, also crucial to attract foreign investment. Boeing Australia set up headquarters in the Brisbane area only after deals with government and universities that ensured people would be appropriately trained for the aviation industry. "There are five or six thousand additional jobs that have come to Queensland because of this," he says.

Other opportunities are arising as big pharmaceutical companies increasingly outsource their R&D, some of which is beginning to come to Australia. "I think we are on the move," he says.



The linkages are simply not there yet...

More events or to list an event go to www.sciencealert.com.au/events

2008

Water Down Under

15 to 17 April 2008, Adelaide, SA

7th Annual Australian Network for Plant Conservation Conference

21 to 24 April 2008, Mulgoa NSW

The Victorian Sustainable Development Conference 2008

22 April 2008, Melbourne VIC

2008 e-Health Research Colloquium

23 April 2008, Brisbane, QLD

Safety In Action 2008

29 April to 1 May 2008, Melbourne, VIC

4th Annual Australian Water Summit

29 April to 1 May 2008, Sydney, NSW

10th International Paediatric and Child Health Nursing Conference

30 to 2 May 2008, Darwin, NT

HEALTH OUTCOMES 2008

30 April to 1 May 2008, Canberra, ACT

10th Breast Care Nurses Conference 2008

1 to 2 May 2008, WA

31st Annual Brain Impairment Conference: Brain Impairment and Ageing

1 to 3 May 2008, Melbourne, VIC

38th Annual Scientific Meeting of the Aus and NZ Society of Nuclear Medicine

1 to 6 May 2008, Gold Coast, QLD

The Art and Science of Impact Assessment

4 to 10 May 2008, Perth, WA

Sustainable Energy Conference: Enviro 08

5 to 7 May 2008, Melbourne, VIC

3rd Asia Pacific Nutrigenomics Conference

6 to 9 May 2008, Melbourne, VIC

Challenges in Cardiology VIII

9 to 10 May 2008, Brisbane, QLD

16th Australian Weeds Conference

18 to 22 May 2008, Cairns, QLD

Redesigning Healthcare for the Ageing Population 2008

20 to 21 May 2008, Brisbane, QLD

Irrigation Australia

20 to 22 May 2008, Melbourne, VIC

Cooperative Research Centres Association Annual Conference 2008

21 to 23 May 2008, Sydney, NSW

Generic Medicines Australia 2008

20 to 22 May 2008, Sydney, NSW

2nd Australian International Green Build & Renewable

1 to 3 June 2008, Sydney, NSW

5th World Conference on Promotion of Mental Health and the Prevention of Mental and Behavioral Disorders

10 to 12 September 2008, Melbourne, VIC

Rail Infrastructure 2008

3 to 5 June 2008, Sydney, NSW

Going Green Expo

5 to 8 June 2008, Melbourne, VIC

14th Australian Vertebrate Pests Conference

10 to 13 June 2008, Darwin, NT

17th World Hydrogen Energy Conference

15 to 19 June 2008, Brisbane, QLD

Clean Energy Australia 2008

17 to 19 June 2008, Sydney, NSW

5th International Conference on Information Technology and Applications (ICITA 2008)

23 to 26 June 2008, Cairns, QLD

Population Health Congress

6 to 9 July 2008, Brisbane, QLD

Australian Society for Microbiology 2008

6 to 10 Jul 2008 Melbourne, VIC

21st Congress of the International Commission for Optics

7 to 10 July 2008, Sydney, NSW

Vision, Memory, Spectacle

9 to 12 July 2008, Perth, WA

2nd ASIAMiner Investing in Mining Conference

15 to 16 July 2008, Brisbane, QLD

Australian Earth Sciences Convention 2008

20 to 24 July 2008, Perth, WA

9th World Meeting of International Society for Bayesian Analysis

21 to 25 July 2008, Hamilton Island, QLD

International Conference on Photochemical Conversion and Storage of Solar Energy

27 July to 1 Aug 2008, Sydney, NSW

2008 Western Pacific Geophysics Meeting

29 July to 1 Aug 2008, Cairns, QLD

2008 - From Babies to Blokes - The Making of Men

3 to 6 August 2008, Perth, WA

5th World Congress of Society of Environmental Toxicology and Chemistry

3 to 7 August 2008, Sydney, NSW

3rd Australian International Green Build, Design & Technology Show

15 to 17 August 2008, Sydney, NSW

Coast to Coast 2008

18 to 22 August 2008, Darwin, NT

12th Sustainable Economic Growth for Regional Australia (SEGRA) Conference

18 to 20 August 2008, Albury, NSW

2nd Australian Lung Cancer Conference 2008

21 to 24 August 2008, Gold Coast, QLD

12th International Lupin Conference

14 to 18 September 2008, Perth, WA

2008 World Congress of WATOC**(theoretical and computational chemists)**

14 to 19 September 2008, Sydney, NSW

Australasian Sexual Health Conference 2008

15 to 17 September 2008, Perth, WA

11th International Conference on Principles of Knowledge Representation and Reasoning (KR 2008)

16 to 19 September 2008, Sydney, NSW

Leura VI International Breast Cancer Conference 2008

18 to 21 September 2008, Sydney, NSW

World Sustainable Building Conference

21 to 25 September 2008, Melbourne, VIC

Open Access and Research Conference 2008

24 to 25 September 2008, Brisbane, QLD

3rd Annual Conference of the Aus and NZ Chapter of the Society for Risk Analysis

30 September to 1 October 2008, Canberra, ACT

RANZCR 59th Annual Scientific Meeting (radiology and radiation oncology)

16 to 19 October 2008, Adelaide, SA

6th Australasian Viral Hepatitis Conference

20 to 22 October 2008, Brisbane, QLD

Nurse Practitioners: A Solution for the Future

26 to 28 October 2008, Melbourne, VIC

Horizons in livestock management

28 to October 2008, Christchurch, NZ

Australian Association for Infant Mental Health Conference

5 to 8 November 2008, Adelaide, SA

SOIL - The living skin of Planet Earth

1 to 5 December 2008, Palmerston North, NZ

4th International Symposium on Deep Sea Corals

1 to 5 December 2008, Wellington, NZ

Inorganic Chemistry Conference 2008

14 to 18 December 2008, Christchurch, NZ

Evison Symposium on Seismogenesis and Earthquake Forecasting

18 to 22 December 2008, Wellington, NZ

2009

10th International Congress of Ecology

16 to 21 Aug 2009, Brisbane, QLD

12th International Dental Congress on Modern Pain Control

14 to 17 Oct 2009, Gold Coast, QLD

2009 Asia Pacific Conference on Child Abuse and Neglect

15 to 18 November 2009, Perth, WA

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