

R&D

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*Linking Australian Science,
Technology and Business*

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Innovating Australia

The new Labor Government has moved swiftly to start implementing its plans for reorganising R&D in Australia.

As promised, science has been integrated into a new **Department of Innovation, Industry, Science and Research (DIISR)** under Minister *Senator Kim Carr* (see also *opinion page 5 and profile page 23*). The enlarged department embraces agencies such as **Ausindustry**, the **Australian Institute of Marine Science (AIMS)**, the **Australian Nuclear Science and Technology Organisation (ANSTO)**, **CSIRO** as well as the **Cooperative Research Centres (CRCs)**. While university research will be with the DIISR, university education will remain with the **Department of Education, Employment and Workplace Relations**.

RQF

The Government has cancelled the **Research Quality Framework (RQF)** for universities because, according to Senator Carr, it is fundamentally flawed. The Rudd Government has committed to an internationally-recognised, research quality assurance process using metrics or other agreed quality measures appropriate to each research discipline. However, Senator Carr confirms that the 2008 funding for the RQF project (approximately \$15.6 million) under the **Australian Scheme for Higher Education Repositories (ASHER)** Program and the Implementation Assistance Program (IAP) will still be received by universities.

National innovation system

A review of Australia's national innovation system is to be conducted which as a major objective will examine the large number of government innovation and industry assistance programs.

"At last count there were 169 programs in Australia, across all levels of government, aimed at supporting innovation," says Senator Carr. "The review will allow the Rudd Government to work with the States and Territories to streamline these programs, reducing fragmentation and improving effectiveness."



PHOTO: AUSPIC / Canberra

The time frame of the Review is 6 months with a report to the Government expected by the end of July 2008.

Further review objectives will include:

- Identifying a set of principles to underpin the role and participation of the public sector in innovation.
- Developing a set of national innovation priorities to complement the national research priorities, ensuring the objectives of research programs and other innovation initiatives are complementary.
- Identifying regulatory and other barriers to innovation and recommending ways to minimise these.
- Examining the scope for simplifying and reducing program duplication and ensuring that any support provided is well-targeted and easy to access.
- Considering the appropriateness, effectiveness and efficiency of the Research and Development (R&D) Tax Concession Scheme in promoting innovation and making

Continued page 2

recommendations to improve innovation outcomes.

- Considering ways to improve the governance of the national innovation system to support higher expectations of government agencies and industry.
Review panel members (announced so far) are:
- **Dr Terry Cutler**, (Chair), CSIRO director and chair of the Advisory Board for the **Centre for Excellence for Creative Industries**;
- **Professor Mary O'Kane**, executive chair of **Mary O'Kane & Associates**;
- **Dr Megan Clark**, vice president technology, **BHP Billiton**;
- **Professor Glyn Davis**, Vice Chancellor, **University of Melbourne**;
- **Professor Steve Dowrick**, School of Economics, **Australian National University**;
- **Professor John Foster**, School of Economics, **University of Queensland**;
- **Dr Nicholas Gruen**, chief executive officer, **Lateral Economics**;
- **Ms Narelle Kennedy**, chief executive, **Australian Business Foundation**;
- **Ms Catherine Livingstone**, former chair of CSIRO and director, **Macquarie Bank** and **Telstra**;
- **Dr Jim Peacock** (ex-officio), the Chief Scientist.
- **Ms Patricia Kelly** (ex-officio), deputy secretary of the **DIISR**
- ▶ For more information on the review, visit www.innovation.gov.au/innovationreview

CRC Review

A review of the Cooperative Research Centres Program will form part of the review of the National Innovation System. It will examine the overall strategic direction of CRCs, looking at the full range of issues, including governance and program design issues, the level and length of funding needed to support the program's objectives, as well as its overall scope and effectiveness. The CRC Program review will be chaired by **Professor Mary O'Kane**. Stakeholder participation in the review will be sought. The next CRC selection round will be held once the Government has considered the outcomes of the Review of the National Innovation System, with the aim of having the next selection process completed by the middle of 2009.

Charter for debate

A new charter for debate by scientists in government-supported organisations is planned. Senator Carr says the charter would be developed in close consultation with the public research institutions including CSIRO, AIMS and ANSTO.

Principles on which the charter will be based include:

- Encouragement of debate on scientific and other research issues of public interest;
- Support for the independence and integrity of public research institutions for their scientific discovery;
- Recognition that the Government remains responsible for the articulation, formulation and implementation of public policy and is accountable to the Parliament and the Australian people for such policies;
- Support for the open communication, dissemination of information and debate about the results of scientific, technical and social research; and
- Recognition that researchers are encouraged to engage in such communication and debate.

ARC Council

In a related move, an independent Advisory Council has been established for the **Australian Research Council** (ARC) to provide advice to the chief executive officer, **Professor Margaret Sheil**, on key research issues. The Advisory Council, to be chaired by Professor Sheil, will provide her with non-binding advice on: strategic issues relating to the mission of the ARC, policy matters relating to innovation, research and research training, and matters relating to the evaluation of the quality and outcomes of research and research training in an international context.

The members of the Council, who have each been appointed for up to three years, are:

- **Professor Terry Hughes**, director, **ARC Centre of Excellence for Coral Reef Studies**, **James Cook University**;
- **Dr Elizabeth Jazwinska**, **Johnson & Johnson Research Pty Ltd**;
- **Professor Stuart Macintyre**, Ernst Scott Professor of History, **The University of Melbourne**;
- **Professor John Ralston**, director, **Ian Wark Research Institute**, **University of South Australia**;
- **Professor Margaret Seares AO**, Senior Deputy Vice-Chancellor, **The University of Western Australia**; and
- **Professor Arun Sharma**, Deputy Vice-Chancellor (Research/Commercialisation), **Queensland University of Technology**.

Climate Change

Within days of the election, the Labor Government ratified the Kyoto Protocol, a move which may have implications for R&D in energy and the environment.

- ▶ More information: **Patrick Pantano**, 0417 142 23, minister.industry.gov.au/Pages/WhatsNew.aspx

Defence matters

Defence research is set to expand considerably in the next few years, with several research centres being created.

Minister for Defence Science and Personnel, **Mr Warren Snowdon**,

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and Minister for Innovation, Industry, Science and Research, **Senator Kim Carr**, have announced an \$82 million **Defence Materials Technology Centre**, the first to be established under Labor's Defence Future Capability Technology Centre Program.

The centre, a partnership between the **Department of Defence**, including the **Defence Science and Technology Organisation (DSTO)**, the **Defence Material Organisation** and the **Capability Development Group**, and the **Department of Innovation, Industry, Science and Research (DIISR)**, will facilitate collaboration between publicly funded research organisations, leading Australian universities and defence industry. The centre will primarily be located in Victoria and will receive **Australian Government** funding of \$30 million and a further \$52 million from the collaborative partners. These partners include major companies such as **BAE Systems Australia**, **GKN Aerospace**, **BlueScope Steel**, **Surface Technology Coatings**, **Thales Australia** and the **Cooperative Research Centre for Advanced Composite Structures**.

Commencing operations in 2008, the centre will focus on four key research programs: air platforms, maritime platforms, armour applications and propulsion systems. Mr Snowdon says that a number of significant outcomes would be delivered, such as the delivery of improved armour protection for military personnel carriers and new high-tech materials for use in major defence acquisitions.

"To nurture the innovation needed to maintain defence capability and to address the skills shortage in this area, an education and training program will also be designed. The goal of this program will be to produce engineers and scientists with skills attractive to the defence industry and other research providers."

Small to medium enterprises (SMEs) will benefit from the centre through the establishment of a technology transfer program to help SMEs compete in the global manufacturing market.

DSTO and the **University of Adelaide** have signed a new Strategic Alliance Agreement. Building upon an initial agreement in place since early 2004, DSTO and the university are planning a number of initiatives, including a new centre of expertise. DSTO will sponsor 10 scholarships of \$500 for final-year honours students engaged in the study of future technologies for defence and national security applications. DSTO and the University of Adelaide have collaborated for many years in a number of research areas. In 2003, DSTO established two professorial chairs at the university, one in microwave radar and the other in photonics. Under the alliance, DSTO and the university also established a **Centre of Expertise in Photonics** and a **Centre of Expertise in Phased Array and Microwave Radar**, both founded in 2005.

In yet another development, a new **Centre of Expertise in Energetic Materials**, a collaborative venture between DSTO and **Flinders University**, will study the chemistry of energetic materials to support the **Australian Defence Force (ADF)** with new and improved explosives, pyrotechnics and propellants and methods for their handling and storage. The new centre will have key focus areas including safety and environment, materials and properties, and detection and analysis. It will be based within Flinders University's School of Chemistry, Physics and Earth Sciences and will provide opportunities for staff exchanges between the two organisations. DSTO will sponsor the centre with \$200,000 over three years and will also fund the university to undertake additional, focused research tasks.

► **More information: Steve Butler, 0418 800 323, www.dsto.defence.gov.au/collaboration/5189/**

Climatic efforts

The **Bureau of Meteorology Research Centre** and **CSIRO Marine and Atmospheric Research** have joined forces to focus their weather and climate research efforts into a new joint research centre. Staff are located primarily in Melbourne, Canberra and Hobart, as well as Perth, Brisbane

and Darwin. The **Centre for Australian Weather and Climate Research** will provide a coordinated approach to the critically important areas of weather and climate research in Australia.

Foundation Director **Dr Chris Mitchell** says the science undertaken within the centre will be applied across a wide variety of areas beyond climate change such as ocean prediction, seasonal climate prediction, air quality, severe weather and water management. Researchers will have access to new super-computing facilities and are developing the Australian Community Climate and Earth-System Simulator. They will work with the **UK Met Office's** high-powered computer-based weather and climate prediction program and adapt it to Australian conditions.

► **More information: Dr Chris Mitchell, 0408 406 160, www.cawcr.gov.au**

Green energy money

The Minister for Innovation, Industry, Science and Research, **Senator Kim Carr**, has announced more than \$8 million in grants for two renewable energy projects from the **Australian Government's** Renewable Energy Development Initiative, a competitive merit-based grant program supporting renewable energy innovation and its commercialisation. Grants offered are between \$50,000 and \$5 million for research and development, proof-of-concept, and early-stage commercialisation projects with high commercial and greenhouse gas abatement potential.

"One of the projects will build prototypes in Tasmania to test wave and tidal energy technologies. The other project will locate deep geothermal energy resources in the earth's crust in South Australia," says Senator Carr.

Five million dollars has been awarded to Sydney-based **BioPower Systems Pty Limited** to build and install full-scale 20-metre prototypes of its bioWAVE wave and bioSTREAM tidal power systems, which will generate enough power to supply up to 500 homes. Two sites in Tasmania were identified as the best place for the project because of its strong tides and consistent waves in the Bass Strait.

South Australian-based project by **Torrens Energy Limited** has also been awarded more than \$3 million to develop an innovative three dimensional Temperature Field Model (3D-TFM) that will help locate and define hot rock geothermal energy resources in the earth's crust. According to Senator Carr, this project will reduce cost and risk, and result in more efficient exploration of Australia's vast geothermal resources to minimise the need for costly, deep speculative drilling.

► **More information: minister.industry.gov.au**



Multiple cloud-to-ground and cloud-to-cloud lightning strokes during night-time. Observed during night-time thunderstorm.

GM support

The **Australian Academy of Science** has issued a statement supporting the responsible and ethical use of gene technologies to produce genetically modified plants for use in Australian agriculture. It believes gene technology can play a role in the alleviation of malnutrition, enhancing sustainability and securing yields worldwide. Sometimes, the lack of full certainty, in an environment of manageable risk, should not be used as the reason to postpone measures where genetic modification can legitimately be used to address environmental or public health issues.

The Academy says the impact of current adverse consumer reaction by some citizens to GMs and the science system has the potential to negatively impact on innovation and with the flow-on risk of discouraging investment in research and development, harming Australia's progress. Future Australian governments will need to address issues relating to business ethics in GM canola and other genetically-modified organisms.

The statement calls for more effective dialogue between scientists and the mainstream environmental movements to establish common ground and identify areas for future research. The Academy supports a strong and robust public debate as an important component of the introduction of any significantly new technology into society. The Academy emphasises the fundamental importance of peer-reviewed quality science and substantive evidence in assisting public debate.

The Academy strongly supports public scrutiny and safety of genetic research and supports scientifically based labelling of food, in particular where it assists consumers making deliberate dietary choices.

► **More information:** www.science.org.au/policy/gene-tech.htm

Solander moves

A team of 12 scientists led by **The Australian Institute of Marine Science** (AIMS) in collaboration with the Western Australian **Department of Environment and Conservation** (DEC) and **Charles Darwin University** has undertaken a 17 day scientific survey of three atolls in the Rowley Shoals Marine Park including Mermaid Reef National Marine Nature Reserve, about 260 km west-north-west of Broome.

The survey focused on the distribution and abundance of several key target species including sharks, hard and soft corals, trepang or bêche-de-mer, trochus, Tridacnid clams and algae. The data generated will be directly relevant to the successful management of the Rowley Shoals Marine Park and the Commonwealth-managed Mermaid Reef National Marine Nature Reserve.

The survey was the maiden scientific voyage of the *RV Solander*, the latest addition to the AIMS research fleet. It also initiated a new acoustic shark tagging project lead by AIMS, with \$30,000 in funding from the

former Commonwealth **Department of Environment and Water**. Scientists will return in April or May to recover the data.

► **More information:** [Jamie Colquhoun, 0409 682 694, j.colquhoun@aims.gov.au](mailto:j.colquhoun@aims.gov.au)

Innovation up

The **Industry Research & Development Board's (Innovation Australia)** Annual Report records that the number of firms registering for the R&D Tax Concession has continued to increase with a record 6,295 firms registered in income year 2005-06, an increase of 5% over the previous year. Reported R&D expenditure totals \$9.2 billion, which also represents significant growth from the previous year of 9%.

Under the Commercial Ready program, which offers industry a single entry point to competitive grants for early-stage commercialisation activities, research and development, 151 applicants received funding of \$155.29 million contributing to a range of projects valued in excess of \$315.50 million. The new Commercialising Emerging Technologies/ Industry Cooperative Innovation Program (COMET/ICIP) Committee approved 16 applications under Round Two of the ICIP for projects valued at \$24.15 million. Under the COMET program 174 applications were approved for funding totalling \$11.08 million. Twenty one applications were received for the first tranche of Round Three of the Innovation Investment Fund (IIF) program. Four applicants were successful and are expected to raise between \$90 million and \$120 million in investment capital.

During the year, the Board reviewed the administrative arrangements for Commercial Ready, COMET, ICIP, IIF and the Renewable Energy Development Initiative providing advice to the previous **Australian Government** which resulted in the following changes to the suite of programs:

- the eligible group turnover cap for Commercial Ready program applicants was raised from \$50 million to \$100 million in each of the three financial years preceding submission of an application;
- changes to the COMET guidelines were implemented to allow universities, public sector research organisations and related spin-outs to apply for COMET funding;
- changes to the Industry Cooperative Innovation Program Directions and Guidelines were implemented in Round 3 (March 2007) to enhance international collaboration;
- new Directions and Guidelines for the IIF Round 3 were approved on 11 November 2006;
- applications for the Renewable Energy Development Initiative are to be considered on a rolling basis, rather than a rounds based approach.

Changes to the R&D Tax Concession Program were announced in the Australian Government's industry statement. Changes to the beneficial ownership provisions will extend access to the 175% Premium R&D Tax Concession to Australian subsidiaries of multinational enterprises who carry out their R&D in Australia but hold the intellectual property overseas.

As an expansion to the Commercial Ready program, Commercial Ready Plus will provide matching grants between \$50,000 and up to \$250,000 for R&D, proof-of-concept and early-stage commercialisation activities by small companies and spin-offs from universities and public sector research organisations. Companies will also be assisted with a more streamlined application process and faster access to funding than for the larger grants.

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



RV Solander, the new AIMS research vessel

Innovation at a crossroad

The Australian innovation story is a tale of lonely heroes battling against the odds. We have our Nobel laureates, our world-beating inventions, our individual success stories. What we do not have is a broad culture of innovation.

It's time to change that.

The figures speak for themselves. The Australian Bureau of Statistics tells us two-thirds of Australian businesses are non-innovators – they have come up with no new products, services or processes in the last two years. Business spending on R&D went into freefall after 1996; it is now rising again, but the average growth rate from 1996-97 to 2005-06 was half that for the preceding decade. Our universities and public research agencies do magnificent work, but their links to business are often weak. Overall, Australia invests only 1.8 per cent of its GDP in R&D – well below the OECD average.

To turn this situation around we need a fresh start in innovation policy. In fact, we need to redefine what innovation policy is all about. Yes, it is about boosting productivity, increasing competitiveness and securing high-wage, high-skill jobs for the future. These are vitally important objectives, but they are not the whole story. Innovation is also about enriching the quality of life enjoyed by every Australian. Our ability to tackle climate change, to build cohesive communities, and to sustain a vibrant civic life will all depend on how well we can foster innovation and harness its potential.

Creating a new Department of Innovation, Industry, Science and Research was the first step. This department brings all the elements critical to boosting our innovation performance together under one roof.

The next step is to assess what has been done in the past and how we can do it better. That's what the review of the national innovation system I announced on 22 January will help us achieve.

The review panel is chaired by Dr Terry Cutler and includes representatives from business, the universities and government.

We want to streamline the bewildering array of innovation and industry-assistance programs – federal and state – to ensure that support for innovation is accurately targeted and easy to access.

The review will identify regulatory barriers to innovation and recommend ways to lower them. It will assess existing assistance programs against agreed criteria with a view to reducing duplication and fragmentation. It will identify gaps and weaknesses in the innovation system and suggest how we can fix them.

I have asked Dr Cutler and his panel to develop principles for public sector participation in innovation and to explore how we can extend support for innovation to new areas – particularly the services sector.

The panel will give specific consideration to the role the R&D tax concession plays in promoting innovation. The business community has expressed concern about the adequacy of the current 125 per cent R&D tax concession, the complexity of the 175 per cent premium concession, and the thresholds applying to the tax offset for small business.

We want the tax concession scheme to boost the volume and intensity of R&D activity, to encourage international links and persuade multinationals to do research in Australia, and to promote business collaboration with universities and research agencies.



Senator Kim Carr

The review panel is expected to complete a green paper by 31 July. The government will then prepare a white paper setting out its policy response, including a set of national innovation priorities to complement our national research priorities.

Successful innovation depends on many things – the level of investment, the quality of infrastructure, the responsiveness of government. The most important precondition, however, is an environment of freedom, democracy, diversity and openness.

That's why I have strengthened the independence of the Australian Research Council by creating an independent advisory council and introducing transparent decision-making processes.

That's why I am working with our public research agencies to develop charters that will guarantee their independence and integrity, recognise their right to participate in debates about scientific and other issues of public interest, and promote open discussion of their research findings.

And that's why I have abandoned the Research Quality Framework. The RQF was poorly designed and administratively expensive. It relied on an impact measure that was unverifiable and ill-defined. We will introduce a new, streamlined, internationally-recognised quality assurance process for research, using metrics or other agreed quality measures appropriate to each research discipline. I want a less cumbersome and less costly process that still provides the kind of accountability the Australian government and taxpayers expect.

We are at a watershed in Australian innovation. We need to shift away from the over-riding emphasis on short-term commercialisation that has prevailed over the past decade. It is time we started thinking strategically. The public interest and public benefit must be central to everything we do. Many of the benefits we expect to accrue from innovation are economic, but that is not the only yardstick. We must have the courage to think long-term.

Above all, we must remain open to new ideas, new solutions and new possibilities. An innovator's work is never done.

East met West earlier

Wheat grains nearly 5,000 years old found at a Chinese archaeological site two years ago, have revealed that western man travelled, brought new agriculture and settled in China much earlier than previously thought.

Recently published research of ANSTO's *Professor John Dodson* and *Professor Xiaoqiang Li*, *State Key Laboratory of Loess and Quaternary Geology*, focuses on the Xishanping archaeological site in northwest China where wheat and barley carbon dated to 2,650BC was found.

Professor Dodson says that wheat and barley are not indigenous to China and originated in the Middle East around 10,000 years ago, so the discovered samples had to have come from the West. "Carbon dating of the Xishanping wheat and barley also showed it to be 2,500 years older than the oldest known Chinese trade route, the Silk Road, which was established in 200BC," says Professor Dodson. "However the exchange was not reciprocal as Eastern agriculture only came West much later."

"The question as to why crops from China did not travel further westward at this time is puzzling," he says. "However it's possible Chinese migration to the West commenced much later and those who travelled East either stayed or did not take rice back with them for some time."

According to Professor Li, agricultural expansion, especially with important crops like wheat and rice, and cultural impacts were huge events for Neolithic Eurasia as human activity is the key to big changes on the land and ultimately big impacts on the environment. "Early agricultural development included population growth and the expansion of material cultures and language which makes this research even more poignant," he says.

Another major archaeological find in the region twenty years ago may have uncovered the remains of those who brought the wheat. "In 1987 in the very dry hilly region of Xinjiang in China's far northwest, archaeologists uncovered what in the end were 100 perfectly preserved corpses which were not only 4,000 years old but also Caucasian, with blond hair, long noses and deep-set eyes," explains Professor Dodson. "These people possibly came

from Turkey, although this is not clear, however we believe they are most likely to be the ones who brought wheat and barley to China."

► **More information:** www.ansto.gov.au/information_for_for_media/2007_media_archive.html

Watch thy truck

Today's mine haul trucks are massive vehicles in which drivers have limited vision and cannot see anything within around 30 metres. If a smaller vehicle on the mine site gets in the way of one of these monsters, the consequences can be dire.

CSIRO Exploration & Mining's *Dr Patrick Glynn* is leading a research project to help solve this problem by developing a 360 degree proximity detection system. "We took a standard Doppler radar system and adapted it with integrated signal processing," Dr Glynn says. "The technology will alert the driver if a hidden object is moving relative to the mine haul truck, what direction it is moving, what its rate of change is, and whether a collision will occur. In all cases the system reports to the driver in one tenth of a second, far shorter than the average reaction time for a driver of about one second."

While the research is still in its development stage, a prototype has been tested at Goonyella riverside, one of the largest open cut coal mines in Australia, located in Queensland's Bowen basin south west of Mackay.

Current plans are to tie in the system with an existing reversing camera and monitor. Additional video cameras will automatically display a detected vehicle on the monitor, along with its speed and position.

"The real challenge is to provide information in a natural way so that the driver does not have to take their eyes off the road. Drivers already have a lot on their hands and should not be overloaded with information," Dr Glynn says.

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



A mine haul truck

Big brother

Australians and Americans need to start being more aware of biometrics - fingerprint, hand or iris scans - and the potential for abuse of their privacy and civil liberties, a **Deakin University** academic warns.

International research carried out by *Dr Nina Weerakkody* from Deakin in conjunction with colleagues in the USA and Malaysia says a survey which examined public opinion on the use

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of biometrics as a form of identification in everyday life found only one in five Australians and Americans believed they were an invasion of privacy while two in five had no opinion either way.

This compares with three in five Malaysians believing biometric devices were an invasion of privacy.

The study asked people what they thought of the use of biometric devices in everyday life. The situations surveyed included the use of biometric devices at Automatic Teller Machines, for logging into personal computers, when buying products online, in schools to protect children, for tracking employee work hours, for security related to air travel, use by doctors and hospitals to guard patient records and in maintaining security at stadiums and other public places.

“The Malaysians were the most unhappy with biometric devices, probably because they live with it,” she says.

Overall the study found Australians, Americans and Malaysians preferred finger print scanning as a form of security. Voice recognition was preferred next by Australians and Americans while retina scans were preferred by Malaysians.

Dr Weerakkody calls on Australians to become more informed about the use of biometrics in the workplace and to be more discerning about releasing personal data. She also called for the use of biometric devices to be covered by laws, regulations, guidelines and codes of practice to prevent abuse.

When applied in the workplace, employers introduce more controls such as biometrics to regulate things like employees’ access to internet or their time taken for lunch breaks when they have to enter or exit their offices using biometric identifiers.

“Such surveillance can give rise to a work environment which lacks creativity, flexibility or the accommodation of individual and personality variances. Far from increasing productivity, it leads to low staff morale, loss of motivation and lack of trust.” Dr Weerakkody says the data collected by biometric devices was easily open to abuse by governments and industry.

► **More information:** www.deakin.edu.au/news/media.php

Fossils going home

A mammoth 750 kilograms of illegally imported dinosaur, mammal and reptile fossils seized by Australian officials over the past two years have been returned to the Chinese Government. Minister for the Environment, Heritage and the Arts, **Peter Garrett**, handed the fossils back to His Excellency **Mr Zhang Junsai**, Ambassador of the People’s Republic of China, at a ceremony in Canberra. “These fossils from provinces across China are of incredible cultural and scientific value to the People’s Republic and to the world,” says Mr Garrett. “They are national treasures that tell a fascinating story about different geological periods as well as ancient environments.

“Some are believed to be up to 450 million years old, and are valued up to \$100,000. However the rarest are considered priceless because of their value to China’s scientific and cultural heritage,” he says. “They range from several types of dinosaur eggs to marine reptiles, fish and crustaceans.”

“They will be sent back to China for preservation and research, to ensure they are protected for future generations.”

The fossils were seized between 2004 and 2007 under the Australian Government’s Protection of Movable Cultural

Heritage Act 1986, in a number of joint operations by the Australian Federal Police and the Department of the Environment, Water, Heritage and the Arts. The most recent seizure took place in November 2007.

This repatriation follows the return of 10,000 illegally imported Chinese fossils in September 2005. Other objects seized recently through the Act include 130 kilograms of dinosaur and plant fossils returned to the Argentine Republic in August 2007, 16 Dyak Skulls returned to Malaysia in May 2007, and an Asmat human skull from Papua returned to Indonesia in December 2006.

► **More information:** www.environment.gov.au/minister/garrett/2008/

Coral collector

Australian and US scientists are using an unmanned submersible to locate live and fossilised deep-ocean corals south of Tasmania to track changes in climate in the southern hemisphere.

Like tree rings, growth rings in corals indicate age. They also reflect changes over centuries and millennia in ocean chemistry and the ocean environment.

The submersible will dive to depths of 2.5 kilometres and spend up to 6-7 hours filming the corals and other biodiversity at that depth. “Deep ocean corals are a litmus test of the deep ocean when it comes to identifying how temperature and salinity have changed over decades and centuries, especially in our own region in the Tasman Sea and the Southern Ocean,” says chief scientist on the voyage, **Dr Ron Thresher** of CSIRO’s Wealth from Oceans National Research Flagship. “By collecting coral samples around the Tasmanian seamounts reserve and other deep ocean ranges south of the State we hope to track two influential elements on the global climate system - the formation of water masses at the Antarctic coast and the circulation of the Southern Ocean.”

The platform for research on the 23-day voyage is Australia’s Marine National Facility research vessel, Southern Surveyor.

The submersible can dive for up to seven hours and its cameras will film locations that can be sampled on a follow-up voyage later in the year. A submersible dive below 1,800m will allow scientists to view biodiversity at depths never before seen in the Australian region.

► **More information:** www.marine.csiro.au/nationalfacility/voyages/0108/

Booze forbidden

Parents who are inclined to allow their children a sip of alcohol occasionally should think again. New research has shown that parents who set rules that forbid their children using any alcohol at home reduce the risk that their children will become alcohol users in their early teens.

Deakin University Professor of Psychology **John Toumbourou** completed the study of the influences on early adolescent alcohol use with colleagues from the **Murdoch Children’s Research Institute**, the **University of Melbourne** and the **University of New South Wales**. The results highlight the strong impact parents and schools have on teen drinking.

Professor Toumbourou says the findings are a wake-up call for

parents. “We found that teens were around half as likely to have consumed alcohol by age 13 when their parents said that they did not allow their children to have even a small sip of alcohol at home or at celebrations in the first year of secondary school. We also found that adolescents with a parent who drank regularly, or smoked cigarettes, were at increased risk of drinking themselves. However, the findings revealed that whether or not parents drank regularly or smoked themselves, the families that set a firm rule that prohibited children using any alcohol at home reduced the risk of adolescent alcohol use.

The study involved 2,315 Year 7 students from 24 schools in Melbourne who were then followed up one year later. It examined the influence of family factors relative to school, peer and individual influences on the development of adolescent alcohol use during the first year of secondary school. The potential of an intervention program, known as Resilient Families, to prevent early adolescent alcohol use and enhance school success was also evaluated. Overall, the results showed that 33% of students reported drinking alcohol at the start of Year 7. This figure rose to 47% one year later.

► **More information:** www.deakin.edu.au/news/media.php

Ravens not good canaries

Scientists at CSIRO’s Australian Animal Health Laboratory (AAHL) in Geelong, Victoria have found that birds are unlikely to be used as part of an ‘early warning’ system designed to alert health authorities to the presence of the deadly West Nile virus in Australia. While the zoonotic disease, West Nile virus, is not

present in Australia, it has been reported for many years in eastern Mediterranean and southern European countries. It was first detected in North America in 1999.

The virus is transmitted to humans by infected mosquitoes and the reservoir host is a wide range of birds. The majority of infected humans display only mild flu-like symptoms or no symptoms at all. However, some individuals may suffer severe illness due to encephalitis which can result in death.

Research leader, CSIRO’s **Dr John Bingham**, says in the US dead-bird surveillance is considered the most sensitive early detection system for the virus, with dead birds, mainly crows, appearing weeks, even months, before human cases.

However, Dr Bingham says the study found Little Ravens were relatively resistant to the New York strain of West Nile virus and Kunjin virus. “This means Australia’s Little Raven could not be used as an early warning sentinel, indicating the presence of West Nile virus in Australia,” he says.

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



Little Raven (*Corvus mellori*)

Risky ID

Health care workers’ identity badges and lanyards could be harbouring dangerous bacteria and helping spread infections around hospitals. In a report in the *Medical Journal of Australia* **Dr Rhonda Stuart**, an infectious diseases physician at the **Monash Medical Centre** in Melbourne, and her co-authors found that identity badges and lanyards were capable of harbouring bacteria such as methicillin-resistant *Staphylococcus aureus* (MRSA). Their study showed lanyards were more common hiding places for infectious bacteria than badges.

“Lanyards and identity badges are worn by both male and female clinical staff for long periods of time without cleaning,” say the authors. “Their position at waist level and their pendulous nature increase the risk that they will become contaminated.”

The authors recommend that regular disinfection of identity badges may reduce bacterial pathogen contamination, but ultimately, strict staff hand hygiene is the best way to prevent cross-infection.

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

Self-service hang-ups

Deakin University researchers **Dr Nichola Robertson** and **Professor Robin Shaw**, looked at how customers responded when self-service technology like ATMs, internet banking and ticketing machines went wrong.

“Self-service technology is a fact of life, however, this research uncovered frustrated consumers who are seething with resentment regarding these technologies,” Dr Robertson explained. “We looked at customers’ negative experiences with all types of self-service technology, from interactive voice response, to Internet banking and ticketing machines,” Dr Robertson says.

“What was a particularly interesting and new finding of the research was that customers reported an overwhelming feeling of powerlessness. Self-service technologies are promoted as increasing consumers’ sense of power, control, and independence, yet our research indicated that this is not always the case.”

Dr Robertson says customers had a higher expectation of self-service technology. “They think the service is going to be quicker, more reliable, and more responsive,” she says. “Yet even people who are confident with technology still had problems with self-service machines.”

“What was interesting was that people would go to great lengths to get the technology to work properly. They would try to get a friend to help them, search for instructions and really tried to help themselves.

“When they finally got to the point where they needed to complain, people would temper this desire by looking at the ease of the complaint process, the desire to vent frustration and their perceived self-confidence in using the technology.”

Customers would complain in various ways, she says. “A lack of complaints to the organisation does not mean that customers are satisfied with these technologies, and the old adage, “no news is good news” is far from applicable in the context of consumer complaint behaviour.”

Dr Robertson says providing a human avenue for customers to vent was very important.

► **More information:** **Sandra Kingston, 0422 005 0485**

The Academy of Science has announced its awards for 2008

Senior award recipients:

- **Craig Medal: Professor Leo Radom**, ARC Centre of Excellence in Free Radical Chemistry and Biotechnology and the School of Chemistry, **University of Sydney** – for major contributions to the use of theory in areas of chemistry such as the application of computational quantum chemistry to the study of chemical structures and reactions;
- **Ian Wark Medal and Lecture: Dr Alan Reid**, former director of **CSIRO Institute of Energy and Earth Resources** – for contributions in the areas of complex chemistry relating to mineral processing, the solid state chemistry for solar collector systems and in the statistics and stereology of mineral particle systems;
- **Mawson Medal and Lecture: Professor Peter Cawood**, Professor of Geology, **Tectonics Special Research Centre**, School of Earth and Environmental Sciences, **University of Western Australia** – for his role as an international leader in the application of structural geology, tectonic processes and geochronology, and contributions to the understanding of the development of the continental lithosphere throughout geological time;
- **Burnet Medal and Lecture (2007): Professor Richard Shine**, ARC Federation Fellow and Professor in Evolutionary Biology, School of Biological Sciences, **University of Sydney** – for outstanding and influential research in ecology, evolution and conservation spanning over 30 years;
- **Flinders Medal and Lecture (2009): Professor Bruce McKellar**, Professor of Theoretical Physics, **University of Melbourne** – for consistent leading edge research in physics, influencing a number of fields of particle physics;

Early-career award recipients (for researchers under 40 years of age)

- **Dorothy Hill Award: Dr Sandra McLaren**, Centenary Research Fellow, School of Earth Sciences, **The University of Melbourne** – for contributions to the understanding of diverse areas of Earth sciences,

including continental tectonics, thermochronology, microstructural and basin analysis;

- **Fenner Medal: Dr Michael McCarthy**, Principal Research Fellow, School of Botany, **The University of Melbourne** – for his leading role in theoretical ecology with contributions to risk models for threatened species, disturbance ecology, environmental decision-making and Bayesian methods in ecology;
 - **Frederick White Prize: Dr Ronald Smernik**, Australian Research Council QEII Fellow, School of Earth and Environmental Sciences, **The University of Adelaide** – for contributions in the chemistry of organic materials in soils and sediments focusing on the development and application of nuclear magnetic resonance (NMR) techniques to characterise soil properties;
 - **Ruth Stephens Gani Medal: Dr Vanessa Hayes**, Group Leader Cancer Genetics, **Garvan Institute of Medical Research** – for contributions in human genetics research concerning genetic risk factors for cervical and colorectal cancer, the importance of genetic polymorphisms in progression of HIV disease in the African population, and the identification of genetic markers associated with prostate cancer and prediction of prostate cancer outcome;
 - **Gottschalk Medal: Dr Gabrielle Belz**, Howard Hughes Medical Institute Scholar, Wellcome Trust Overseas Fellow, Immunology Division, **The Walter and Eliza Hall Institute of Medical Research** – for ground-breaking discoveries on the response of the immune system to viruses.
 - **Le Fèvre Memorial Prize: Dr Stuart Batten**, Senior Lecturer, School of Chemistry, **Monash University** – for contributions in the area of crystal engineering;
 - **Pawsey Medal: Dr Kostya (Ken) Ostrikov**, Associate Research Professor, Australian Research Council QEII Fellow, School of Physics, **The University of Sydney** – for contributions in diverse multidisciplinary fields, particularly in plasma nanoscience;
- **More information:** www.science.org.au/awards/2008awards.htm

2008 Victoria Prize

Call for nominations

Celebrating excellence in science, engineering and technology

Nominations are now open for the 2008 Victoria Prize. This annual award recognises a Victorian whose ground-breaking discovery or innovation in science, engineering or technology has advanced knowledge or will produce a commercial outcome or other benefit to the community. The winner will be awarded a \$50,000 cash prize.

This Award is an initiative of the Victorian Government in support and recognition of outstanding Victorian scientific research and innovation.

Anne & Eric Smorgon Memorial Award

The \$100,000 Anne and Eric Smorgon Memorial Award is awarded by the Jack and Robert Smorgon Families Foundation to a research institute supporting the work of the Victoria Prize winner.

Nominations close on 7 April 2008

For more information and application forms please go to www.business.vic.gov.au/vicprize or call (03) 9651 9054



A Victorian Government initiative



2008 Victoria Fellowships

Call for applications

Overseas Study Grants

Applications are now open for the 2008 Victoria Fellowships. This annual program offers six \$18,000 international study missions to early career postgraduates, researchers and private enterprise scientists, engineers and innovators.

Winners of the 2008 Victoria Fellowships will also be eligible to apply for a \$5,000 AFAS FEAST-France Fellowship. This supplementary Fellowship is awarded by the Australian French Association for Science and Technology and the Embassy of France to facilitate science and technology of mutual benefit to Victoria and France.

Applications close on 7 April 2008

For application forms and further information go to www.business.vic.gov.au/vicfellows or call (03) 9651 9054.



A Victorian Government initiative



Well connected

Initiated by the **Australian American Leadership Dialogue (AALD)**, leading politicians, industry, media and science representatives on both sides of the Pacific attended a demonstration of the OptiPortal scientific videoconferencing link. The powerful next generation ultra-resolution visualisation was carried over a super broadband network connecting the **University of Melbourne** and the **University of California San Diego (UCSD)**.

The 96 million pixel "OptiPortal" visualization wall was constructed at the University of Melbourne from 24 x 30 inch LCD screens. By comparison, a standard PC can show about 1-2 million pixels.

The largest in Australia, it demonstrated 'in real time' cutting-edge medical and environmental research to participants in the AALD's West Coast Leadership Dialogue at the **University of California San Diego** using a novel interactive high-definition television stream over a 1000 megabit/sec ("gigabit/s") super-broadband optical fibre connection.

The link up, established by the University of Melbourne School of Engineering's Centre for Ultra Broadband Information Networks (CUBIN) and the **California Institute for Telecommunications and Information Technology (Calit2)**, a UCSD/University of California Irvine partnership, utilised the high-capacity backbone of **Australia's academic and research network (AARNet)**. Dean of Engineering at Melbourne, **Professor Iven Mareels**, says, "The 'real-time' nature of the technology means people on opposite sides of the world can work together on projects in real-time. For instance, a surgeon in Australia could direct an emergency surgical intervention by operating a robot in Antarctica; scientists in Australia and Japan could share research tools such as the Australian Synchrotron, or operate an underwater robot exploring the Great Barrier Reef – all from the comfort of an OptiPortal room."

The current facility will be expanded in a straightforward and modular way to include other collaborators at different sites in Victoria and in other parts of Australia.

The OptiPortal is connected over AARNet's transpacific fibre optic network and uses high definition video. AARNet Pty Ltd (APL) operates Australia's Academic and Research Network (AARNet), and has pioneered the global use of high definition television streams.

► **More information:** www.aarnet.edu.au/Article/News.aspx?p=43

Taking it slow

While there is a high level of awareness of and interest in Voice over Internet Protocol (VoIP) services among Australian consumers, take-up is still comparatively low, according to research released by the **Australian Communications and Media Authority**.

The research found that 81% of Internet households were aware of VoIP but only 15% of respondents (people 18 years and over) and 13% of small and medium enterprises (SMEs) had used a VoIP service.

The findings are included in the research report, *The Australian VoIP Market*, which presents the findings of research into the supply and demand of VoIP services in Australia.

Chris Chapman, ACMA chairman says, "Consistent with other research into the take-up and use of new communications services, VoIP usage is higher in the younger age groups and households with high income levels. VoIP users are also more likely to be on the cusp of emerging

communications trends, such as substitution of mobiles for fixed services as the main form of communication."

On the supply side, the report estimates that there were 269 VoIP providers in Australia in September 2007.

► **More information:** www.acma.gov.au/WEB/HOMEPAGE/PC=HOME

Habituated doctors

Pharmaceutical advertisements included in clinical software have little influence on the prescribing behaviour of GPs, according to a study by **Professor Graeme Miller, Joan Henderson** and their co-authors from the **Family Medicine Research Centre** at the **University of Sydney**.

The researchers assessed the effects of advertisements embedded in clinical software. These advertisements included full screen images and 'strip messages' with or without animation.

The authors found that these forms of advertising had no apparent impact on prescribing, and may even reduce prescribing of advertised products.

"This does not exclude the possibility that such advertisements increase prescribing marginally but sufficiently to provide a competitive return on investment," Prof Miller says.

Dr Peter Mansfield, a lecturer in general practice at the **University of Adelaide**, says advertisements in clinical software could become more effective in a few years when doctors have become used to them.

"Doctors are habituated to journal advertisements, but may give advertisements delivered through a new channel more attention and thus more scrutiny, rendering them less effective," Dr Mansfield says. "Some doctors may react against advertisements they don't like. When patients also see an advertisement on the computer screen, the doctor may choose an unadvertised drug to avoid having it appear that the decision was biased."

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

Puzzling money

The world's largest search engine – **Google** – has awarded two research grants totalling \$104,000 to the **University of Adelaide** to improve students' problem-solving skills and also develop novel 3D techniques.

Google is committing more than \$46,000 to help the University create a computer-based curriculum with a focus on problem-solving skills.

The School of Computer Science will develop the curriculum, incorporating puzzle-based learning and computational problem solving, which becomes more specialised at each level.

"Some puzzle-based learning pilot classes have recently been presented and proved very popular with students," according to **Associate Professor David Munro**, Acting Head of School. "These classes will be developed and refined over the next 18 months, with the first course offered in 2009."

A second year course designed to teach problem solving using computers is already being trialled with Masters students and is also expected to be offered from 2009.

"The curriculum aims to produce graduates who are better at solving problems and therefore more valuable to the workforce," says Associate Professor Munro.

► **More information:** www.adelaide.edu.au/news/news23661.html

By Rebecca James
CHIEF EXECUTIVE OFFICER, RESEARCH AUSTRALIA*

Where to for biotech?

One of the more optimistic respondents to Research Australia's "Beyond Discovery" 2007 survey of 68 Australian biotechnology based companies commented "If the science 'sings' then the path to commercialisation is much easier."

The general picture for biotechnology in Australia is one of muted optimism, not surprising given the findings of Research Australia's survey. Well publicised stand-out stories associated with medical devices and products from companies such as Cochlear and CSL tend to stand apart from the day-to-day realities of those seeking to commercialise biomedical research. Work continues within the biotech sector and a number will break through within the near future. But with the possibility of a change in government policy and a tougher economic environment, can we expect this muted optimism to continue?

"Beyond Discovery 2007" examined the research origins and commercial experiences of 68 Australian biotechs as a follow up to a similar survey in 2004.

The survey showed that similar to 2004 a third of biotechs are at start-up or have revenues below \$2 million, with only 10% of the respondents (38% of which were listed companies) indicating profitability. Promisingly, almost half of the companies in the recent survey derived higher revenue from product sales, licensing of IP and royalties. Of those surveyed, 41% are currently exporting and 60% are planning to export in the next 12 months. While size is small, with a median of 16 employees, more than 80% of the companies surveyed have filed new patents protecting their intellectual property, and more than 50% have acquired IP from others.

In 2007, research origins in whole or in part were reported to be from private companies (44%) and/or universities (35%), compared with universities (66%) and private companies (21%) in 2004. This may be associated with the maturing of the biotech sector and an increasing ability to conduct research alone or in collaboration with third parties.

Respondents in 2007 showed less reliance on Australian Government sources such as NHMRC and ARC, and identified in-house company research (24%), private inventors (24%) and universities (21%) as the major source of funding for the original research. Over the same period funding from state governments rose from 8% to 18%.

However the on-going need for funding to drive development remains a significant hurdle, while over half have difficulty in attracting appropriate staff. There is a continued reliance on government funding support, with 65% having received Australian Government support and 40% state funding over the past three years.

So what does this mean for the future, and, in particular, in the context of a new national government?

Since the late 90s governments have increasingly recognised the importance of medical research in generating social and economic benefits. National and state governments have made major investments to support basic science R&D. Research

Australia has been an active supporter of this process, advocating assistance for new companies and new investment into health and medical research from all sources.

Though investment is long term and has a high risk profile, support for biotechnology has the capacity to generate economic benefits and transform health and wellbeing, reducing the ultimate cost on the health system - borne out recently by the development of the new cervical cancer vaccine from research conducted by Professor Ian Fraser over a decade ago.

This raises an interesting question about time and the risk tolerance of investors, whether private or government.

If the pathway to community benefit rests on successful commercialisation alone, policy makers, after significant government investment in the sector, are likely to want to see measurable and more immediate social and economic outcomes. This is particularly relevant in the context of a change of government nationally and the commitment to a major new national innovation approach that will consider biotechnology as one of many competing sectors for the innovation dollar. It is also important in a context where researchers themselves are canvassing other pathways to delivering social benefit from research investment – such as research translation (or "diffusion") directly through clinical practice rather than the commercialisation track.

The incoming government has a focus on hospital care and preventive health. This is hard to argue against when there are 2.3 million Australians with signs of chronic kidney disease, 65% who don't exercise, 22% who smoke and 13% who consume high risk amounts of alcohol, who are all likely to line up at doctors surgeries and hospitals in the not-too-distant future.

Beyond Discovery 2007 identified biotechnology as a maturing industry, increasingly able to pursue business objectives and develop collaborations and private sector relationships, but with underlying government support. The potential social and economic gains are considerable, but for how long will governments emphasise the importance of commercialisation as a means of delivering benefits rather than other competing mechanisms such as improvements in the healthcare system? Is there a risk to the further development of a vibrant and productive Australian biotech industry which is critical to driving innovation and quality within the health agenda?

The recently announced review of innovation provides a valuable opportunity to explore these questions.

**Research Australia is a non government, membership based organisation with the aim of making health and medical research a higher national priority. For more information on the "Beyond Discovery" 2007 survey visit www.researchaustralia.org*



Asbestos disease help

A \$12 million **Asbestos Diseases Research Institute**, operated by the **Asbestos Research Foundation**, will be an affiliate research institute with the **University of Sydney**. Based at in the education and research precinct of the **Concord Repatriation General Hospital**, the institute will provide early diagnosis and treatment for the victims of asbestos related diseases. The building, named **The Bernie Banton Centre** in honour of the veteran asbestos diseases campaigner, is scheduled to open in October 2008. Funding for the Institute has been provided jointly by the **Dust Diseases Board** (\$7 million) and the University of Sydney (\$2.9 million). The university and the foundation have jointly appointed **Professor Nico van Zandwijk**, who has been recruited from The Netherlands, as the Asbestos Diseases Research Institute's inaugural director.

► **More information: Jake O'Shaughnessy 02 9351 4312, 0421 617 861**

Bioscience success

The Queensland Government has signed a \$50 million funding agreement to continue its support of the **Institute for Molecular Bioscience (IMB)** at the **University of Queensland**. The funding will be over five years to begin in 2009-10. The IMB is currently funded until 2008-09.

The IMB undertakes research in mammalian systems with a focus on human health and biotechnology. Its research includes diseases such as cancer, kidney disease and inflammatory disease.

According to IMB director **Professor Brandon Wainwright** a Government review of the institute's operations in its first five years showed that the IMB would generate up to 1000 jobs and grow the economy by \$400 million its first 15 years. Since its establishment, the IMB has attracted \$112 million in national and international research funding to Queensland, established 11 spin-out companies through the university's dedicated commercialisation company **IMBcom**, and published over 1300 scientific papers in peer-review journals.

► **More information: Bronwyn Adams 07 3346 1234, 0418 575 247**

Bio-manufactured future

The **University of Queensland's Australian Institute for Bioengineering and Nanotechnology (AIBN)** and **The Dow Chemical Company** have formed a research alliance combining AIBN's research expertise with Dow's market knowledge. According to AIBN director **Professor Peter Gray** the partnership will focus on two key areas: biomimicry and developing new manufacturing systems using bio-feedstocks.

"Escalating oil costs and concerns about carbon dioxide emissions make it imperative to develop new manufacturing processes based on renewable substrates rather than diminishing fossil fuels," he says. "Scientific advances in the biosciences, have enabled researchers to genetically reprogram bacteria to produce the chemical building blocks of the future." The alliance is ultimately expected to deliver new materials and processes capable of producing desired molecules from renewable resources in a cost effective manner.

► **More information: Russell Griggs 0404 425 742 r.griggs@uq.edu.au**

Rural attraction

A new **Australian National University (ANU)** Medical School campus will add to health infrastructure in the Southern Tablelands, encouraging more medical students to practice in the region once they complete their

studies. The **Rural Clinical School Teaching Facility** has opened at **Goulburn Base Hospital** and will provide a permanent base for ANU medical students and staff who are working with local health services as part of the school's rural program.

Apart from the students who spend their entire year in a regional placement, the ANU Medical School Rural Program supports a number of medical students for a six-week rural rotation in Goulburn during the integrated Year 3 program. The building will also be an administration centre for the Rural Clinical School academic and administrative staff employed in Goulburn.

► **More information: Simon Couper 02 6125 4171, 0416 249 241**

Better together

The **University of Ballarat** and **Ballarat Cancer Research Centre** are to collaborate on a number of medical research projects. Both parties will jointly pursue a range of opportunities and collaborations particularly in relation to joint training, teaching and research projects, use of facilities, community engagement and any other relevant joint activities. A further objective is to establish a **Joint Institutional Committee** to identify projects and opportunities of mutual interest and to ensure that communication between the parties is maintained and structured.

► **More information: Matthew Freeman 5327 9510, 0408 519 674**

Know-how leaders

The **University of Melbourne** is developing a University Information Futures Strategy to position Melbourne as a leader in the application of scholarly information and technologies to underpin next generation research, learning, teaching and knowledge transfer.

In January 2008, the university set up an **Information Futures Commission**, modelled on the university's highly-successful **Curriculum Commission** which oversaw a major overhaul of the university's entire curriculum in 2006. Led by the university's Vice-Principal and chief information officer, **Ms Linda O'Brien** the Commission will examine international trends in libraries and scholarly technologies, review the university's current capability, and consult widely to develop an inspiring and deliverable strategy through to 2015. A commission's steering committee will be chaired by the Vice-Chancellor, **Professor Glyn Davis**.

► **More information: Christina Buckridge, cmb@unimelb.edu.au, 03 8344 6158**

Smart cropping

Increasing demand for practitioners who can manage the future sustainability and viability of broadacre cropping zones in Australia, has led **Curtin University of Technology's** Muresk Institute to develop a new course unit. The unit will provide expertise in precision management techniques and genetic technologies with particular emphasis on the future climatic conditions in broad acre cropping areas of Australia.

The new Advanced Agricultural Technologies unit commences in the second semester this year at Curtin's Northam campus and will provide agribusiness students with knowledge and skills in genomics and precision agriculture. Matched with a precision agriculture component for 'smarter' crop management, the unit will provide students with the keys to improve variety selection, cropping and land management decisions.

► **More information: Dr Bob Belford 08 9690 1567, r.belford@curtin.edu.au**

Banana power

Powering your house on banana waste may sound a little unrealistic, but **University of Queensland** researcher, *Associate Professor Bill Clarke*, proved it was a possibility.

Between 2004 and 2005 Dr Clarke uncovered the potential to produce energy from banana waste, which **Growcom**, a peak horticulture organisation, has recently taken up in a commercial scale project in North Queensland, a location where bananas are far from scarce.

"We demonstrated in 2004-2005 that waste bananas and stalk material within the banana bunch are a great source of methane," Dr Clarke says. "There are no technical problems with producing methane from bananas. However, for the process to be economically viable, we need to develop a cheaper and simpler digester compared to those that are currently used for organic waste in Europe."

Production of banana derived biogas, a mixture of methane and carbon dioxide, requires an air tight reactor, carefully controlled for pH and, ideally, temperature. A pilot scale bladder reactor was recently built by the **Australian Banana Growers' Association**.

It is the biogas produced from bananas which could potentially be used as an alternative energy source, Dr Clarke says. "The biogas can either be stored at moderate pressure, possibly for use as a transportation fuel, or directed to a gas engine to generate electricity, as is currently done in Australia at a number of landfills."

► **More information:** www.uq.edu.au/news/?category=54

Virus-like particle vaccine

Select Vaccines Ltd has produced a new influenza vaccine candidate. A specific protein component of the virus-like particle (VLP) vaccine is being targeted by vaccine companies world wide because it may allow cross-protection against all strains of Type A flu, including the bird flu, H5N1. The first successful vaccine of this type is expected to be an attractive new product in the fight against flu.

The new influenza VLP has been manufactured in yeast at laboratory scale. The company is conducting early preclinical work on this vaccine candidate to test for preliminary indications of immune response. Results are expected in late 2008.

The company is on schedule with its manufacturing program to produce VLP vaccines from a preferred industrial scale yeast-based expression system in early 2008. The European subcontractor assisting with the development of the yeast system has commenced screening the yeast colonies for the production of the second and final component of the VLP vaccines. This is an important manufacturing goal as the yeast expression system will provide the essential proof-of-capability to manufacture target VLPs in yeast on commercial scale for clinical development.

The company intends to develop industrial scale VLP production technology, which is a critical aspect in vaccine development. On a laboratory scale, Select has manufactured its VLPs in both yeast and mammalian cell culture systems, which provides flexibility for the requirements of different vaccines.

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

Microbicide trial expanded

An amendment is being made to the Phase I expanded safety study of VivaGel®, a vaginal microbicide that is being developed for prevention of HIV and genital herpes by **Starpharma Holdings Limited**. VivaGel® has fast track status for development for HIV from the **US Food and Drug Administration (FDA)**, and has received in excess of \$26m funding support from the **US National Institute of Health (NIH)** for its development for both HIV and HSV-2.

It is being developed as a potential coating on condoms and as a stand alone product to protect against the contraction of sexually transmitted infections. It has also been shown to have a contraceptive effect in animal trials.

The trial, which is being conducted in sexually active HIV-negative women in the USA, will add a third study group and enrol a total of 60 participants instead of 40.

Starpharma and its study partners mutually agreed to amend the study following an interim review of data. Enrolment into the study has been paused to allow the study protocol to be amended and to allow additional training at the two trial sites in Tampa, Florida, and San Juan, Puerto Rico. Enrolment into the study is expected to re-commence shortly.

Enrolment and follow-up has been successfully completed and data analysis is currently underway in study SPL7013-004, another **National Institute of Allergy and Infectious Disease** funded expanded safety study of VivaGel®. This was conducted in sexually abstinent women in San Francisco, California, USA, and Kisumu, Kenya. Results from this study are expected to be announced in early 2008. During the trial, routine interim safety reviews identified no emergent pattern of product-related adverse events or participant withdrawals from the study.

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

Welcome warning

In a related story, **Starpharma Holdings Limited** has welcomed a decision by the **US Food and Drug Administration (FDA)** requiring makers of products containing nonoxynol 9 (N9) to carry a warning that the products do not protect against sexually transmitted diseases, including HIV/AIDS and that the use of N9 products is associated with an increased risk of HIV.

The FDA release says: "FDA is issuing this final rule to correct misconceptions that the chemical N9 in these widely available stand-alone contraceptive products protects against sexually transmitted diseases, including HIV infection."

"Clinical research has shown that N9 provides no protection against sexually transmitted diseases to the woman if her sexual partner is infected with an STD pathogen or HIV."

In addition, FDA is requiring that the labels warn consumers that the chemical N9 in stand-alone vaginal contraceptives and spermicides can irritate the vagina and rectum, which may increase the risk of contracting HIV/AIDS from an infected partner.

Starpharma's chief executive officer, *Jackie Fairley*, says, "We feel that this emphasises the urgent need for products such as VivaGel® to assist individuals protect themselves from infection with these serious diseases"

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

Small stayer

Following successful completion of a Phase I study of ART621, biotechnology company **Arana Therapeutics Limited** plans to conduct a three month Phase IIa dose-finding study in psoriasis patients ahead of a Phase II study in rheumatoid arthritis. ART621 is Arana's lead anti-TNF domain-based antibody.

The psoriasis study, to be conducted in Australia, is expected to commence in early 2008 and the Phase II rheumatoid arthritis program is planned to start in late 2008.

Arana has also completed pharmacokinetic analysis of data from the Phase I trial of ART621. The data indicate that ART621 has a half life of approximately 14 days in volunteers following subcutaneous administration, suggesting that, although ART621 is approximately half the size of conventional antibodies, it remains in the blood stream for at least as long as currently marketed anti-TNF antibody products.

Chief executive officer of Arana, **John Chiplin**, says, "We look forward to learning from our clinical trials if the smaller molecular weight of ART621 translates into important clinical benefits in the treatment of inflammatory diseases.

"The favourable half life of ART621 has opened up opportunities in improved dosing for patient benefit. The psoriasis trial will allow us to quickly obtain safety, efficacy and repeat dose pharmacokinetic data to better inform the design of our Phase II rheumatoid arthritis program."

► **More information:** peptech.com.au/HTML/News_Media/NM_Archives_2007.html

Asian approval

The Korean regulatory agency has granted marketing approval for **Pharmaxis's** asthma management product, Aridol.

"This is the first Asian approval of Aridol," says Pharmaxis chief executive officer **Dr Alan Robertson**. "Korea is an important base from which to launch and grow Aridol in Asia. There are an estimated 2.5 million asthma sufferers and yet only 160,000 bronchial challenge tests are performed annually to assist with asthma diagnosis and management. The existing broad acceptance of lung function challenge tests presents a firm opportunity for marketing Aridol."

The Korean pharmaceutical market is one of the twenty largest in the world and together with its Korean distributor **BL&H Co Ltd**, Pharmaxis will now commence pre-marketing while seeking reimbursement approval through the national health scheme. The approval process is expected to conclude in the third quarter of 2008.

A simple to use airways inflammation test, Aridol is administered as a dry powder in a hand held inhaler. Doctors can use the results of this test to identify airway hyper-responsiveness – a hallmark of asthma.

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

Patient's hope

Biotechnology company **Avexa Limited** has initiated the Phase III program for apricitabine (ATC), its anti-HIV drug. The company recently received positive feedback from regulatory agencies allowing ATC's progress into pivotal, filing studies.

The Phase III trials will compare ATC to the current standard of care in HIV-infected patients resistant to current drugs. The program is being conducted in North and South America, Europe, Africa, and Asia (including Australia).

"The high level of demand from clinics and physicians around the world to participate in the Phase III program indicates that physicians and patients believe ATC holds great importance for the improved treatment of drug-resistant HIV patients," says **Dr Chick**, chief executive officer of Avexa.

Avexa also reported that all patients in the Phase IIb study have now completed the 48 week dosing period and the final results are due early 2008. All except one of the eligible patients have entered into the extension study.

"The large proportion of patients entered into the extension study certainly gives us confidence that the patients are receiving long-term therapeutic benefit with ATC as part of their daily treatment" says Dr Chick.

► **More information:** www.avexa.com.au/announcements/601

Indicated benefit

Prana Biotechnology Limited a biopharmaceutical company focused on the research and development of treatments for neurodegenerative disorders, has completed its Phase IIa clinical trial of PBT2 in patients with early Alzheimer's disease.

This Phase IIa trial is a double blind, placebo-controlled study exploring the safety and tolerability of PBT2, Prana's proprietary lead compound. The trial also measured PBT2's effects on the mechanism and progression of the disease, by investigating cerebrospinal fluid (CSF) and biomarkers of Alzheimer's Disease that have been directly associated with the etiology of Alzheimer's Disease, as well as measures of cognition. Outcomes include measures of CSF A-beta and tau protein levels, as well as neurocognitive and behavioural changes.

There is a growing acknowledgement in the literature and the pharmaceutical industry that the biomarkers measured in this trial, specifically the A-beta and tau proteins, might be the indicator of therapeutic benefit of drugs such as PBT2.

► **More information:** www.pranabio.com/company_profile/press_releases.asp

Getting under skin

Phosphagenics Limited has announced positive results of its Phase I clinical trial that showed its delivery technology, TPM, delivered leading pain-relief drug oxycodone through the skin without causing any disruption or irritation.

"Oxycodone, with worldwide annual sales of more than \$US 1 billion, is more potent than morphine with fewer adverse effects; however, oxycodone is not available transdermally due to serious issues relating to skin sensitisation and irritation," says **Dr Esra Ogru**, executive vice president of research and development at Phosphagenics.

The single-centre, single-blinded, pharmacokinetic trial in 16 healthy subjects, which was conducted at the **Royal Adelaide Hospital** found that oxycodone, administered as a single transdermal application was safe with no adverse events reported. In addition, oxycodone was detected in the subjects for at least 48 hours demonstrating that the formulation was bioavailable and effective in delivering oxycodone into the body.

A collaborative program is underway with a world leading patch development company to incorporate the current formulation into a patch system. A pivotal clinical study is planned in the first half of 2008.

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

Promising alternative

A new medicine called omacetaxine mepesuccinate (formerly known as Ceflatonin – see also related story 'Personalised medicine', R&D Review, Nov

issue, page 14) has demonstrated a direct anti-cancer effect on leukaemic stem cells. The medicine not only kills the cancer stem cells, but also inhibits cancer cell growth and greatly reduces a protein called Mcl-1, which is found in several types of leukaemia and other cancers.

Melbourne-based scientist **Dr Collier**, who is also the chief executive officer of Australian biotechnology company Chemgenex says, "We have had a very positive response from twenty one chronic myeloid leukaemia (CML) patients taking part in an omacetaxine phase 2/3 clinical trial. A significant number of CML patients had an extended disease-free survival."

Dr Greg Collier has co-presented these results at an international hematology meeting in the US.

The first line of treatment for the majority of CML cancer patients is a drug called Gleevec. Unfortunately, an increasing number of CML patients are developing resistance to Gleevec meaning that it is no longer effective in keeping the cancer under control, resulting in a need for an alternative therapy.

► **More information:** www.chemgenex.com/wt/home/index

Bowel relief

A recently completed Phase Ib clinical trial of a new drug to treat inflammatory bowel disease (IBD) indicates that treatment may be possible with just a single daily dose. The drug, NV-52, is a novel compound being developed by Australian pharmaceutical company **Novogen Limited** as an oral agent for the maintenance of remission in IBD.

IBD is characterised by periods of remission, during which symptoms are controlled by a variety of drugs. However, relapse where symptoms recur is very common and often needs hospitalisation. There is no cure for IBD, and currently available medications are unable to prevent disease 'flares'. As well, all therapies have side effects which compromise quality of life significantly.

In this latest study, NV-52 was administered once daily over a seven day period to nine healthy volunteers. During that time, the levels of NV-52 were measured in the blood, and a wide range of safety assessments undertaken.

"[The] results indicated that oral therapy with just one dose of NV-52 each day would provide plasma levels in IBD patients that were similar to those which were effective in mice," study director **Professor Laurie Howes** says. "Furthermore, chronic dosing with NV-52 caused no abnormalities in any of the volunteers, confirming NV-52's excellent safety profile. Further studies are now appropriate to determine whether NV-52 is effective in maintaining remission in IBD patients."

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

Strong position

Neuren Pharmaceuticals is on track to have four Phase 2 or Phase 3 clinical trials in progress in four different indications by the middle of 2008. As a result, the company will have one of the most advanced and comprehensive late stage drug pipelines in Australasia.

The most advanced product in Neuren's pipeline is Glypromate® which is in a Phase 3 trial for the reduction of cognitive impairment in patients undergoing cardiac surgery.

Phase 1a and 1b safety trials have been completed for Neuren's second lead compound, NNZ-2566, and the company is planning to file an Investigational New Drug (IND) application with the US **Food and Drug Administration** (FDA) in early 2008 and to initiate two Phase 2 trials in

collaboration with the US Army.

Motiva™, the third compound in the product pipeline, already has an open IND with the US FDA and preparations are underway for a Phase 2b trial.

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

Expanding programs

An Australian adult stem cell company, **Mesoblast Limited** has completed a capital raising of \$13.44 million from Australian institutional and sophisticated investors.

The capital will be used to commence additional Phase 2 Clinical Trials in the United States and Australia in the areas of bone and cartilage repair and regeneration using Mesoblast's proprietary allogeneic, or "off-the-shelf", adult stem cells.

The company intends to file additional Investigational New Drug (IND) submissions to the US **Food and Drug Administration** (FDA) by early- mid 2008 for clearance to commence the trials.

These trials will proceed in parallel to Mesoblast's ongoing clinical trial of NeoFuse™, its allogeneic stem cell product for spinal fusion. This trial is currently enrolling patients with degenerative intervertebral disc disease, and is based at **New York's Hospital for Special Surgery**, a centre for orthopaedic, rheumatologic and rehabilitation treatments. The company also expects to report interim results from this trial in early to mid 2008.

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

Patient update

A third patient in **Living Cell Technologies Limited's** Russian clinical trial has been implanted with the first dose of DiabeCell® and is due for a second dose in six months. DiabeCell® is a porcine pancreatic cell product for the treatment of insulin-dependent diabetes. It is administered to patients without the need for immunosuppressant drugs.

The first patient implanted with DiabeCell® in June 2007 maintained a 40% reduction in his insulin requirement at five months follow-up. The second patient received the first dose of DiabeCell® in September 2007 and remained insulin independent at two months follow up.

Medical director **Professor Bob Elliott** comments, "We are very encouraged by the positive preliminary data from the first two patients in the Russian trial and look forward to providing more detailed updates on all three patients by the end of first quarter 2008."

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

BNC105 update

Australian drug discovery company **Bionomics Limited's** lead anti-cancer compound, BNC105, has successfully passed review of its Investigational New Drug (IND) application by the US **Food and Drug Administration** (FDA).

IND status indicates regulatory approval to conduct clinical trials in humans and is granted to drugs in development that exhibit pre-clinical efficacy and safety. BNC105 is a new type of anti-cancer drug called a Vascular Disruption Agent (VDA) that acts to rapidly shut down the blood supply within a tumour thereby starving the tumour of nutrients (see also related story "Targeting cancer", R&D Review, Nov issue, p. 13).

With the success of its IND application and pending ethics approval, Bionomics will conduct the first clinical trial on BNC105 in Australia with plans to conduct further clinical trials in the US and Australia.

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

Outsourced testing

Genetic Technologies Limited has signed a three-year forensic DNA testing agreement with the **New South Wales Police Force**. Under the terms of the agreement, Genetic Technologies will conduct forensic DNA analysis on "volume crime" samples such as break and enter, motor vehicle theft, theft of items from motor vehicles, and malicious damage offences.

Genetic Technologies chief executive officer, **Michael Obanessian**, says,

"Mounting workloads may create significant frustrations for police, the judiciary and the public. As has been successfully demonstrated in the US and UK, the outsourcing of DNA forensics testing is a logical and cost effective way to assist police forces to manage the growing demand for DNA analysis."

The awarding of the forensic agreement comes after GTG successfully completed a three-month outsourcing trial with the NSW Police Force in mid-2006.

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

Expanded service

NeuroDiscovery Ltd, a neurology focused research and development company, has entered into an alliance with **Argenta Discovery Ltd**, UK. Through this agreement Argenta gains preferential access to specialist electrophysiology and hERG testing services and expertise of NeuroSolutions Ltd, a 100% subsidiary of NeuroDiscovery Ltd. The collaboration will enable Argenta to provide its contract research clients with an expanded assay development and screening resource, either as part of an integrated drug discovery programme, or as a stand-alone service.

NeuroDiscovery has also entered into an agreement with a major US pharmaceutical company. The agreement provides for the provision of NeuroSolutions' specialist electrophysiology services over a three month period with agreed initial work plans commencing immediately with an approximate value of AU\$100,000.

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

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

Healthy agreement

IBA Health Group Ltd, a specialist information technology company, and **Healthscope Ltd**, Australia's only national private hospital operator, have entered an agreement worth over \$14 million over 7.5 years. IBA will provide Healthscope's 45 medical and surgical hospitals with a company wide licence for IBA's hospital information solutions and an ongoing support and services facility.

Additional services will be provided over the life of the agreement for development, implementation and deployment services. The agreement also provides the framework for licensing and implementation of additional IBA products as Healthscope continues the vertical integration of its hospital, pathology, clinic and primary care business.

► **More information:** www.ibatech.com/html/

Paid up

Biotechnology company **Arana Therapeutics Ltd** has received the remaining funds of A\$17.7 million arising from the sale of its shareholding in **Domantis Ltd** in January 2007.

Chief executive officer **Dr John Chiplin** says, "This is the final part of the very successful sale of Domantis to GlaxoSmithKline. Arana's financial position has been made even stronger by the receipt of these funds. Our financial position is even better than it might have been, as we entered into foreign exchange contracts with a net exchange rate of 0.40; significantly more favourable to today's spot rates."

► **More information:** peptech.com.au/HTML/News_Media/NM_Latest_News.html

Boeing research centre

The company **Boeing** is to establish a branch of its **Phantom Works** advanced research and development unit in Australia, with a head office in Brisbane and initial plans to employ 30 scientific and engineering staff, split evenly between Brisbane and Melbourne. Headquartered in St Louis, Missouri, and employing about 2,000 people, Phantom Works supports Boeing's commercial and integrated defence systems business units and has developed technologies that are used by a host of aviation and aerospace organisations, including NASA and the US Department of Defence.

The Phantom Works branch in Australia will concentrate on several major research programs, including advanced composites, light robotics, Unmanned Airborne Vehicles (UAVs) and ageing aircraft technologies. It will also conduct research that addresses aerospace environmental issues through innovative air space management concepts to improve airport efficiency and reduce noise and fuel burn when aircraft land.

Queensland premier **Anna Bligh** says that having Phantom Works set up shop in Brisbane is a tremendous boost to the State's R&D capability. "Phantom Works operates collaboratively on its research projects and an example of this is the Scramjet Project which is a partnership between the **University of Queensland** and the US based Phantom Works and supported by the **Queensland Government**."

► **More information:** 07 3224 4500

Original Wind

Origin Energy has acquired an option to develop up to 590 MW of wind farm projects in NSW through a strategic relationship with **Epuron**. The development will start with the construction of the 30MW Cullerin Range wind farm near Goulburn in NSW.

Fully operational, Cullerin Range will provide enough renewable electricity to power almost 15,000 typical homes in NSW, saving about 100,000 tonnes of carbon annually. "Origin is well placed to make a significant contribution to helping reduce the carbon intensity of the Australian economy and the Federal Government meet its 20% renewables target by 2020," says Origin chief operating officer **Karen Moses**. The project will also help Origin supply green electricity to the 270,000 customers who have requested it.

The Cullerin Range wind farm is one of three permitted sites in NSW, including Conroy's Gap (30MW) and Snowy Plains (30MW), where Origin has also acquired the rights to develop these projects. In addition, the company has entered into a Strategic Relationship Agreement with an option for another 500MW of Epuron sites.

Commissioning of the Cullerin Range wind farm is expected to start in 2009.

Executive director of Epuron, **Martin Poole** says "It is now recognised that NSW has an excellent wind resource and in light of the Federal Government's 20% renewables policy we expect to see significant activity in the wind industry over the next few years."

► **More information:** www.originenergy.com.au/news/news.php?pageid=10

Premier innovations

Three major projects with significant long-term benefits for South Australia's mining, resource, defence and manufacturing sectors and regional community have been awarded more than \$2.5 million from the **Premier's Science and Research Fund**.

The director of the **Mawson Institute for Advanced Manufacturing** at the **University of South Australia** (UniSA), **Professor Robert Short**, will lead a consortium from the **Ian Wark Research Institute**, **Flinders University**, the **CSIRO**, **Research Laboratories Australia**, **Schefenacker Vision Systems Australia**, **Carl Zeiss Vision**, **Bio Innovation SA** and the **Electronics Industry Association** to explore how micro-cavity plasma discharges (MPDs) could provide a new generation of products and services across a range of industries. MPD technology, which manipulates electrically excited gas in a low-pressure environment, is behind new products such as "lab-on-chip" devices, in which an entire chemical plant can be scaled-down to a laboratory bench, and the next generation of electronics.

A new **Regional Sustainability Centre**, to be based at UniSA's Whyalla campus, will initially focus on solar power and water desalination for the Upper Spencer Gulf to help meet the enormous energy, water and infrastructure needs of the State's booming mining and resources industry in the region. UniSA's **Institute for Sustainable Systems and Technologies** (ISST), with partners at **Wizard Power**, **Onesteel**, the **Whyalla Economic Development Board** and the **Whyalla City Council**, will support local organisations in developing an integrated and environmentally sustainable approach to economic development in the region. It will work collaboratively with UniSA's **Centre for Regional Engagement** and the **Centre for Rural Health and Community Development**, both based in Whyalla.

The third project, the South Australia Networking Laboratory (SANLAB), will be jointly undertaken by the **Centre for Defence Communications and Information Networking** at the **University of Adelaide** and UniSA's **Institute for Telecommunications Research** (ITR), together with **Tenix Defence** and **Aerospace and Cisco Systems**. The SANLAB will provide experimentation facilities and research expertise for the development of Defence Mobile Ad Hoc Networks, an emerging communication technology that holds great promise for the **Australian Defence Forces**.

► **More information:** **Geraldine Hinter** (08) 8302 0963, 0417 861 832, geraldine.hinter@unisa.edu.au

Talking innovation . . .

NSW **Deputy Premier John Watkins** has announced the appointment of 10 business and government leaders to the **NSW Innovation Council**, which will advise the Government on initiatives to foster innovation-led growth. Members are:

- **Steven Harker** (Chair) – managing director and chief executive officer **Morgan Stanley Australia**;
- **Catherine Livingstone** – business director and former chair of the **CSIRO**, former head of **Cochlear Pty Ltd**;
- **Professor Jonathan West** – director, **Australian Innovation Research Centre**, on whose work the Innovation Statement is based;

- **Dr David Skellern** – chief executive officer, **National ICT Australia**;
- **Greg Smith** – director, **Animal Logic**;
- **Mark O'Neill** – former executive director, **Australian Coal Association**;
- **Robyn Kruk** – director-general, **Department of Premier and Cabinet**;
- **John Pierce** – secretary, **NSW Treasury**;
- **Michael Coutts-Trotter** – director-general, **Department of Education and Training** and managing director, **TAFE NSW**;
- **Barry Buffier** – director-general, **Department of State and Regional Development**.

The Innovation Council will work closely with industry groups as well as the NSW Government's **Skills Council** and **Manufacturing Council**, to ensure a close partnership in fostering innovation.

► **More information:** www.business.nsw.gov.au/newsroom

. . . and climate change

Queensland's new **Council on Climate Change** is a 16 person advisory panel charged with ensuring Queensland's efforts in addressing climate change are informed by the best available knowledge and experience. Membership includes 2007 Australian of the Year, **Dr Tim Flannery**, president of the **Australian Conservation Foundation**, **Professor Ian Lowe** and the chief executive officer of the **Clean Energy Council**, **Dominique La Fontaine**. Premier **Anna Bligh** will chair the Council and deputy chair will be the Minister for Sustainability, Climate Change and Innovation, **Andrew McNamara**.

Ms Bligh says the council will provide guidance on allocation of funding from the Queensland Climate Change Fund. The Fund is an initiative of ClimateSmart 2050 and the initial investment of \$430 million from the sale of government owned assets will provide ongoing annual funding of approximately \$30 million per year.

► **More information:** **Premiers Office 07 3224 4500**

Warm crops & flies

Two new research facilities studying climate change have opened in Victoria.

The \$3.7 million **Free Air Carbon Dioxide (CO₂) Enrichment** (FACE) facility at Horsham will investigate how crops respond to carbon dioxide increases in the atmosphere as a result of climate change. It is the first facility of its kind in Australia, using technology from similar research facilities in the United States, Europe and China. Testing will focus on the behaviour and responses of wheat under the drought-prone and nutrient limited conditions typical of Australia. Experiments will provide information that increases the accuracy of existing crop models used to predict what is likely to happen with future changes in climate CO₂ levels, rainfall and temperature.

New laboratories for the **Centre for Environmental Stress and Adaptation Research** (CESAR) opened at the **Bio21 Institute in Parkville**, Melbourne. CESAR will focus on studying the genetics and genomics of insects, particularly the vinegar fly, as they adapt to climate change. By identifying and studying the genes involved in adapting to environment stress, CESAR will help develop biodiversity-based markers of pollutants and environmental health.

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

GM matters

New South Wales and Victoria are to lift their moratoriums on the commercial growing of GM crops this month. New South Wales will establish an expert committee to assess whether industries are prepared and capable of segregating GM and non-GM food crops. The relevant Minister will have the power to refuse approval to cultivate a specific crop if an industry fails to meet the criteria imposed by the expert committee.

The **ACT Government** has joined other States by introducing legislation to ensure the ACT is consistent with the national schemes to prohibit human cloning for reproductive purposes and regulate research involving excess human embryos, other embryos and human eggs; and the national regulatory regime in relation to certain dealings with genetically modified organisms.

► **More information:** NSW - www.dpi.nsw.gov.au, Vic - www.dpc.vic.gov.au, ACT - Angie Drake 02 6205 0139, 0408 092 016

Menzies expansion

The **Northern Territory Government** is providing \$5.5 million to the **Menzies School of Health Research** as part of its commitment to building healthier communities for Territorians. The capital grant is on top of \$5 million allocated by the **Australian Government** in the 2007 budget, ensuring that Menzies will be able to double its present capacity. Projections have shown the current workforce of 162 is likely to expand to 400 in a decade. Work on the extension is expected to begin within 12 months.

► **More information:** Andrea Adlam 0401 119467

Solar go-ahead

The construction of a \$10 million solar energy research and development facility near Bendigo has been given the green light by the **Victorian State Government**. Planning Minister **Justin Madden** says that **Solar Systems Pty Ltd** now has planning approval to build a state of the art solar testing plant in Bridgewater. "The site will be used to test and optimise technology for the \$420 million large-scale solar power station planned for north-west Victoria, announced in October last year." According to Victoria's Energy & Resources Minister, **Peter Batchelor** the Victorian Renewable Energy Target (VRET) sets a target of 10 per cent of Victoria's electricity consumption to be met from renewable sources by 2016.

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

Nurtured research talent

The **ACT Government** has awarded over \$250,000 in funding to foster the talents of health and medical researchers in the ACT, funded under the ACT Health and Medical Research Support Program.

Successful applicants are:

Professor Ian Ramsbaw, Australian National University

– developing a cross-strain and cross-subtype vaccine based on cell-mediated immune responses to internal influenza antigens to provide coverage against H5N1, H1N1 and H3N2;

Matthew Cook, The Canberra Hospital and Australian National University – examining how IgE, T cells and intrinsic signalling

influences mast cell activation and their effect on atopic dermatitis using a unique mouse model;

Dr Kevin Saliba, Australian National University – determining whether the mechanisms by which the malaria parasite acquires and utilises riboflavin (vitamin B₂) can be targeted by riboflavin analogues to kill the malaria parasite, both *in vitro* and *in vivo*;

Dr Ljubov Simson, University of Canberra - developing, optimising and characterising a panel of novel small modified sugars that have been identified to initiate adult stem cell release;

Professor Klaus Matthaei, Australian National University – generating a new mouse model that will allow the analysis of the antiviral activity of p150, an interferon (IFN)-induced isoform of the adenosine deaminase ADAR1 and its contribution to IFN side effects;

Ms Jennie Yaxley, The Canberra Hospital and University of Canberra – developing and trialling a Sequential Wobbleboard Exercise Program that progressively challenges balance through gradual increases in instability.

► **More information:** Angie Drake 6205 0139, 0408 092 016

In focus

The **Centre of Excellence for Coherent X-Ray Science (CXS)** is a new laser imaging facility designed to study the membrane protein structures used in drug development. Victoria's Innovation Minister **Gavin Jennings** says the **Victorian Government** has provided \$1.8 million for the Femtosecond High Power Laser, which develops very high resolution imaging methods as 'proof-of-concept' for further imaging work at the **Australian Synchrotron**.

The CXS will be led by **Professor Keith Nugent** from the **University of Melbourne**. Professor Nugent was awarded the 2004 Victoria Prize for his pioneering work with imaging techniques. Key members of CXS are **CSIRO**, the University of Melbourne, **Latrobe**, **Monash** and **Swinburne Universities** and the Australian Synchrotron.

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

Digital Developments

The \$60 million **National Information Communication Technology Australia (NICTA)** laboratory facility recently opened in Canberra is the largest single operational branch of NICTA, with 97 staff members and a further 65 students undergoing PhD studies. NICTA is currently implementing 17 research projects in its Canberra branch, including the development of new wireless technologies, smart cars, medical imaging and human performance monitoring.

Victoria's Premier, **John Brumby**, has launched the Optiportal node, aimed at giving Victorian researchers access to super-fast "ultra" broadband connectivity via a one Gigabit AARNet link across the Pacific, linking Victoria with the United States. The Victorian Government is creating a grid of advanced ICT infrastructure and applications to enable richer research collaboration, allowing faster and better access to information, tools and people than ever before. See ICT News, page 10.

► **More information:** ACT - Penelope Layland 6205 9777, penelope.layland@act.gov.au



Andy Carroll



Gail Anderson



Christian Langton



Janet Verbyla

Simply proteolytic

The discovery of a new enzyme found in men suffering prostate cancer is one of many advances that have led to Queensland University of Technology's **Professor Judith Clements** being honoured with an international award. As the first Australian to ever win the Frey-Werle Foundation Commemorative Gold Medal, Professor Clements was recognised for her outstanding contribution to knowledge of the kallikrein-kinin enzyme family and its potential for the early diagnosis and treatment of prostate cancer.

Top vets

Dr Andy Carroll has become Australia's Chief Veterinary Officer. In 1985, after completing his research at James Cook University, Dr Carroll joined the Australian Public Service, working in the Department of Agriculture, Fisheries and Forestry and its predecessors in a range of program management roles dealing with animal health and disease matters and food programs.

The University of Adelaide has appointed orthopaedic researcher and specialist vet surgeon **Professor Gail Anderson** as head of its new School of Veterinary Science. Professor Anderson is currently Professor of Companion Animal Surgery at the University of Queensland and hospital director of UQ's Veterinary Teaching Hospital and Clinic. A past president of the Canadian Orthopaedic Research Society, Professor Anderson has a strong research record, with interests in orthopaedics/bone remodelling, and biotechnology to improve the integration of prostheses in bone.

Ultrasonic attenuator

Professor Christian Langton will join Queensland University of Technology's Faculty of Science in 2008. Professor Langton is renowned for his work in the area of ultrasound assessment of cancellous bone and osteoporosis, and holds several patents relating to his research. He developed the technique known as Broadband Ultrasonic Attenuation (BUA) which has been recognised as one of the top "100 discoveries and developments in UK Universities that have changed the world" over the past 50 years. He comes to Queensland from the University of Hull in the UK.

Known & eager deans

An academic with a very public passion for science has been appointed Dean of Charles Sturt University's (CSU) Faculty of Science. **Professor Nick Klomp** acted in the Dean's role in 2007 and has previously held the position of the Head of the School of Environmental Sciences, based at CSU's Albury-Wodonga Campus. As a regular ABC radio commentator on a range of science issues, Professor Klomp is well known across regional Australia for his science stories and commentaries.

Professor Janet Verbyla has joined the University of Southern Queensland from Flinders University in South Australia, where she held the position of Head of the School of Informatics and Engineering. Professor Verbyla says she is eager to encourage people to consider higher education in sciences as part of her roles as Dean of Sciences and Pro Vice-Chancellor Learning Technologies at USQ.

State Supreme

The University of South Australia's Laureate **Professor John Ralston** is the 2007 South Australian of the Year. This follows the award of SA Scientist of the Year earlier in 2007. Prof Ralston is the director and founder of UniSA's Ian Wark Research Institute.

Wild winner

Principal Research Scientist with the NSW DPI's Vertebrate Pest Research Unit, **Dr Glen Saunders**, is the winner of the Graeme Caughley Medal, presented by the Australian Wildlife Management Society to recognise outstanding contributions to the field of wildlife management in Australia and New Zealand. Dr Saunders has been instrumental in developing federal and NSW state policy on best practice management of pest animals. He is regarded as a national expert on the ecology and management of feral pigs and foxes, and has also had extensive input into exotic animal diseases preparedness, and in setting policy for the humane treatment of pests.

Salty winner

Agricultural scientist **Professor Philip Cocks** is the winner of the 2008 Farrer Memorial medal. Formerly the chief executive officer with the Centre for Cooperative Research for Plant-based Management of Dryland Salinity, Professor Cocks is well regarded for his contribution to a range of agricultural research initiatives.

Judy returns

The University of Wollongong has officially appointed its new Deputy Vice-Chancellor (Research). **Professor Judy Raper** from the National Science Foundation in the United States will take up the position in August this year. Currently working as the division director of Chemical, Bioengineering, Environmental and Transport Systems at the National Science Foundation, she was previously department chair, Chemical & Biological Engineering at the Missouri University of Science and Technology (formerly known as University of Missouri-Rolla). Before this role she served as the Dean of Engineering at the University of Sydney.

Journal guru

Professor Colin Murray-Wallace from the University of Wollongong's School of Earth and Environmental

Sciences has been appointed the new Editor-in-Chief of international Elsevier journal *Quaternary Science Reviews*

Sustaining player

Sustainability expert **Professor Peter Newman**, together with several members of an outstanding research and teaching team in sustainability, will join Curtin University of Technology. Professor Newman developed the Western Australian State Sustainability Strategy, Australia's first such strategy at the state level; was the first Sustainability Commissioner in New South Wales; and was a Fulbright Scholar in 2006-07 examining innovations in sustainability in the United States. He recently retired as director of the Institute for Sustainability and Technology Policy at Murdoch University.

Dancing with the stars

Well known expert on the international Square Kilometre Array project, **Professor Peter Hall**, has joined Curtin University of Technology's radio astronomy team. Professor Hall was, until recently, the International Project Engineer for the Square Kilometre Array (SKA), a role which involved a great deal of travel between the 19 stakeholder countries. He is currently based at the CSIRO Australia Telescope National Facility in Sydney.

Neuro head Dr Iain Chessell has been appointed chief executive of NeuroDiscovery Ltd, a neurology focused R&D company. Dr Chessell joins NeuroDiscovery from GlaxoSmithKline, where he was worldwide Head of Pain Research. He will be based in the UK, where NeuroDiscovery has its operational base in its wholly owned subsidiary, NeuroSolutions Ltd.

Land & Water Fellows

Professor Derek Eamus from the University of Technology Sydney and **Dr Peter Davies** from Freshwater Systems Tasmania have been awarded Land & Water Australia Senior Research Fellowships for 2008. Dr Davies' work will develop future scenarios for the Murray Darling Basin river ecosystems under the possible mixes of climate change and changes in water and land use. Prof Eamus will be bringing together understanding of the three-way interactions among water, forests and climate, something that many people are identifying as a critical issue in making smart decisions

Health head

Curtin University of Technology has appointed **Professor Jill Downie** as Pro Vice-Chancellor Health Sciences, to head its Faculty of Health Sciences. Professor Downie was Head of the School of Nursing and Midwifery and Professor of Nursing at Curtin for 6 years, and has acted in the Pro Vice-Chancellor Health Sciences role since August 2007.



Colin Murray-Wallace



Judith Clements



Derek Eamus



Glen Saunders



Judy Raper



Nick Klomp

Kipper gas

Esso (a subsidiary of ExxonMobil) and its joint venture partners, BHP Billiton and Santos have invested \$1 billion into a natural gas project located in 100 metres of water, approximately 45 kilometres from Ninety Mile Beach on the Gippsland coast of Victoria. The Kipper resource holds approximately 620 billion cubic feet of recoverable gas and 30 million barrels of condensate/LPG – enough energy to power a city of a million people for 15 years.

“While the new natural gas supply from Kipper will help meet growing energy demand across Eastern Australia, it is also important from an environmental perspective,” says ExxonMobil Australia chairman **Mark Nolan**. “In fact, natural gas produces up to 70 percent fewer emissions than coal in power generation and uses up to 80 percent less water.

The project was welcomed by Federal Minister for Resources and Energy, **Martin Ferguson** and the **Victorian Government**.

The Kipper field will be developed by the installation of a number of subsea wells, piped back to existing infrastructure at Longford. Construction will commence in the second half of 2008 and first gas is expected in 2011, subject to finalisation of construction contracts.

► **More information:** **Rob Young, 03 9270 3443, 0438 080 998.**

Boneseed blocker

Boneseed (*Chrysanthemoides monilifera*) is one of Australia's 20 Weeds of National Significance, threatening native bushland in south eastern Australia with its dense evergreen growth. Introduced into Australian around 150 years ago, it now has the potential to invade much of southern Australia, endangering native flora and fauna. A potential remedy for boneseed infestations may be a rust fungus that keeps boneseed under control in its native setting of South Africa.

The **CSIRO** and the **Plant Protection Research Institute** in Stellenbosch, South Africa, are together investigating the possible use of the rust species, *Endophyllum osteospermi*, as a biocontrol agent. “Boneseed rust is highly promising as a biocontrol agent for boneseed because it reduces growth and reproduction of the plants, deforming infected branches into ‘witches brooms,’” says **Dr Louise Morin** from CSIRO Entomology and the **CRC for Australian Weed Management**.

Initial host specificity testing was done in South Africa and the rust is now in quarantine in Canberra for the final testing that is required before an application to release can be made.

► **More information:** www.csiro.au/news/ps3v4.html

What wood?

Australian timber company ITC's Tasmanian timber products now carry the internationally recognised Australian Forest Standard (AFS) certification mark which provides consumers with the assurance that they are buying wood from sustainably managed Australian forests.

The **National Association of Forest Industries** (NAFI) chief executive officer, **Catherine Murphy** says, “Forest certification is the most effective way of ensuring that consumers can be satisfied that timber products come from legal and sustainable sources,” after ITC achieved Chain of Custody Certification for its Tasmanian timber products.

“Importantly, buying certified Australian timber means consumers are not potentially buying wood from overseas where forestry practices can often be illegal and unsustainable,” she says.

“As the world grows more and more carbon conscious, it is important

that consumers are aware of the environmental benefits of using timber products which capture and store carbon, by comparison with other high carbon emitting products such as concrete and steel. Timber has a low carbon footprint and is a renewable and sustainable resource.”

► **More information:** www.nafi.com.au/news/

Hot exploration

Vast amounts of land totalling just under 160,000 sq km have been released by the **West Australian Government** for geothermal exploration.

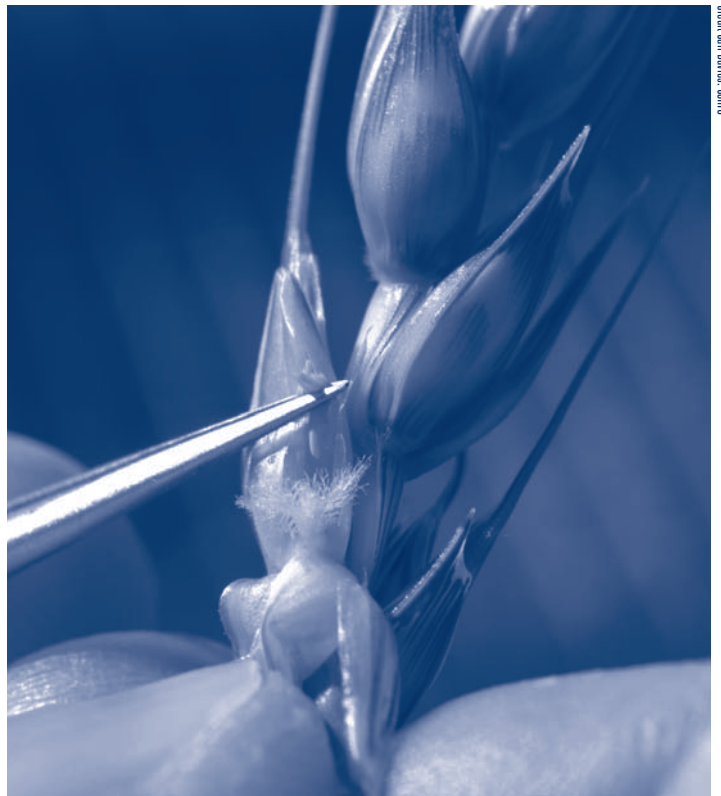
The acreage stretches from south of Kalbarri down to Dunsborough. It goes inland about 250km, finishing at a straight line slightly east of Cunderdin, Narrogin and Wagin and west of Mount Magnet. The land has been divided in to 495 lots, each with an area of 320 sq km. Explorers can bid for any lot within the acreage if they believe it has good potential for geothermal energy.

“We are fortunate in WA to have an abundance of natural energy resources that are in demand across the world,” says Resources and Energy Minister **Francis Logan**. “But we need to diversify our energy supply to keep up with the demand for domestic power, as well as to make a positive contribution to the environment. Geothermal power systems are basically closed systems without emissions. It is one of the cleanest forms of energy possible.” The Minister says the acreage signals the beginning of a dynamic clean energy industry in WA. Bids for the exploration permits will close on 24 April 2008.

A second acreage area, to be situated in the Carnarvon basin region, will be released later this year.

► **More information:** www.doir.wa.gov.au/mineralsandpetroleum/acreage_releases.asp

Simply resistant



A flowering wheat head. The project has the potential to considerably speed up the process of wheat breeding.

Disease resistance genes from three different grass species have been combined in the world's first 'trigenomic' chromosome, which can now be used to breed disease resistant wheat varieties.

The research by CSIRO in collaboration with the **International Maize and Wheat Improvement Center** (CIMMYT) and **Sydney University**, illustrates the genetic improvements possible without genetic modification (GM) technology.

"Wheat breeders often use wild relatives of wheat as sources of novel genes," research team leader **Dr Phil Larkin** says. "Unfortunately genes from wild relatives usually come in large blocks of hundreds of genes, and often include undesirable genes."

The team 'recombined' two wild blocks of genes from two different *Thinopyrum* grass species - a wild relative of wheat - bringing together resistance genes for leaf rust and Barley Yellow Dwarf Virus (BYDV), two of the world's most damaging wheat diseases.

The recombined gene 'package' may also carry a resistance gene against a new stem rust strain, which is causing concern worldwide.

"The exciting part of the new research is that we have been able to retain the useful genes but leave behind the associated undesirable genes - most notably in this case those for yellow flour colour, an important quality characteristic in wheat," Dr Larkin says.

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

Farmwise on crops

The **Victorian Government** has reached agreement with **La Trobe University** to build a \$230 million agricultural **Biosciences Research Centre** in Bundoora. The Minister for Agriculture, **Joe Helper**, says the centre would open up new opportunities for farmers by providing access to cutting-edge research to improve productivity, help fight disease and reduce environmental impact.

"The centre will focus new-generation biosciences research on challenges including climate change and biosecurity preparedness," Mr Helper says. "The work undertaken will improve Victoria's international competitiveness by developing new crop varieties focussed on drought tolerance and bioenergy. It will also enhance our capacity for preparedness, rapid detection, response and management of plant and animal pest and disease outbreaks."

Up to 400 scientists from the Department of Primary Industries (DPI), La Trobe University and the private sector will work at the centre, which will be ready for commencement of occupation by the end of 2011.

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

Little helpers

Australian Wool Innovation (AWI) has released three tools to assist growers and retailers in the progress towards the industry's commitment to the phasing-out of the current practice of mulesing (surgical removal of strips of skin around the tail of a sheep) by 2010.

The three tools include:

- an extensive blowfly strike prevention and management CD, which is a practical guide to assist woolgrowers to minimise the occurrence and extent of blowfly strike in their flocks and can be ordered from the AWI website.
- a declaration form for the sale of non-mulesed wool that allows sellers to declare that a particular sale lot of wool is entirely sourced from non-mulesed sheep. The form is available from brokers and agents.
- a swing tag for manufacturers and retailers who wish to inform their

consumers that a particular product is made entirely from wool sourced from Australian non-mulesed Merino sheep.

The DVD, declaration form and swing tag were developed as part of a settlement between AWI and **People for the Ethical Treatment of Animals** (PETA).

► **More information:** woolinnovation.com.au/

Energetic predictions

Australia's energy consumption is likely to climb by 1.6 per cent per year to 2029-30 under a 'no new policies' scenario, according to a new report (*Australian Energy: national and state projections to 2029-30*) by the **Australian Bureau of Agricultural and Resource Economics** (ABARE).

Under this scenario, Australia would move towards a more services oriented economy and would continue to implement currently established energy efficiency and conservation measures, thus becoming less energy intensive.

"Coal and oil would continue to supply the bulk of Australia's energy needs, although the share of gas would be expected to increase strongly," says ABARE executive director, **Phillip Glyde**. Natural gas consumption would rise by 2.6 per cent a year over the outlook period to account for 24 per cent of total primary energy consumption by 2029-30.

"Renewable energy consumption is also projected to increase but from a smaller base," says Mr Glyde. With the support of only currently established policy measures, such as the Mandatory Renewable Energy Target, renewable energy would increase by an average annual rate of 2.4 per cent out to 2029-30.

The implementation of new policies such as the introduction of an emissions trading scheme and an increase in the Mandatory Renewable Energy Target to 20 per cent of electricity supply by 2020 have not been included in this set of projections.

► **More information:** www.abareconomics.com; Phone 02 6272 2010.

Lantana tracker

Scientists from the Queensland Departments of **Primary Industries and Fisheries** and **Natural Resources and Water** are using remote sensing images from NASA's Landsat satellites integrated with Geographic Information System (GIS) data to map the prevalent weed, lantana.

Described as a "world first" by Minister for Primary Industries and Fisheries, **Tim Mulherin**, the project aims to map outbreaks of lantana along the east coast of Australia in order to develop better control measures.

"The three-year, \$450,000 project has reached its half-way point and already identified extensive lantana outbreaks at several centres, including Mackay, Rockhampton and as far west as Emerald," he says.

"No-one has ever attempted to map weeds using remote sensing technology on such a large scale before," says Mr Mulherin. By mapping all lantana infestations instead of solely relying on landholder reports, we can identify high-priority areas in which to target our resources.

Lantana is one of 20 Weeds of National Significance and is said to rob pastures and forestry plantations of essential nutrients, reducing their productivity and is toxic to stock.

► **More information:** www.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=56293

AUSTRALIAN JOBS	INSTITUTION	CLOSING DATE
Research Fellow in Molecular Modelling of Catalytic Processes	University of Sydney NSW	27 Feb 08
Senior Lecturer / Associate Professor in Periodontology	Griffith University QLD	18 Apr 08
Lecturer in Applied Statistics	University of Ballarat - Mt Helen Campus VIC	24 Feb 08
Health Physicist and Senior Health Physicist	ANSTO NSW	15 Feb 08
Computer Scientist - Virtual Machines and Languages for Embedded Systems	CSIRO ICT Centre QLD	25 Feb 08
Doctoral Fellows - Wireless Sensor Networks	CSIRO ICT Centre QLD	25 Feb 08
Leader - Low Emissions Transport	CSIRO - Energy Transformed Flagship	2 Mar 08
Lecturer - General Practice	Flinders University SA	29 Feb 08
Lecturer or Senior Lecturer in Cetacean Ecology	Flinders University SA	15 Feb 08
Project Scientist	CSIRO Marine and Atmospheric Research VIC	17 Feb 08
Postdoctoral Fellow in Nanotherapeutics	University of Sydney - School of Chemistry NSW	17 Feb 08
Research Scientist - Ecologist	CSIRO Entomology ACT	17 Feb 08
Senior Lecturer in Pathology	University of New South Wales NSW	29 Feb 08
Lecturer in Epidemiology	University of New South Wales NSW	15 Feb 08
Associate Professor / Professor of Psychiatry And Research Director	University of New South Wales Faculty of Medicine NSW	24 Feb 08
Research Associate in Condensed Matter Theory	University of New South Wales NSW	29 Feb 08
Associate Research Fellow - Mutagenesis Research	University of Wollongong NSW	17 Feb 08
Postdoctoral Research Officer or Research Officer - Macromolecules	University of Adelaide SA	15 Feb 08
Manager Satellite Remote Sensing Services	Landgate WA	25 Feb 08
Lecturer - Mathematics	University of Melbourne VIC	25 Feb 08
Lecturer - Medicine	University of New South Wales NSW	20 Mar 08
Lecturer in Chemical Synthesis and Lecturer in Organic/Biological Chemistry	University of Adelaide SA	17 Mar 08
Research Assistant/Research Fellow - Recombinant Protein Research	Monash University VIC	15 Feb 08
Associate Professor/Professor - Industrial Biotechnology	University of New South Wales NSW	22 Feb 08
Leaders in Science and Engineering in Mineral Processing	University of South Australia SA	29 Feb 08
Research Associate - Radio Astronomy Group	University of Tasmania TAS	1 Apr 08
Leader - Low Emissions Transport	CSIRO - Energy Transformed Flagship	2 Mar 08
Lecturer - General Practice	Flinders University SA	29 Feb 08
Project Scientist - Atmosphere and Land Observations and Analyses Research Group	CSIRO Marine and Atmospheric Research VIC	17 Feb 08
Postdoctoral Fellow in Nanotherapeutics	University of Sydney NSW	17 Feb 08
NEW ZEALAND JOBS	INSTITUTION	CLOSING DATE
Senior Scientist, OVERSEER® Nutrient Budget Model	AgResearch New Zealand	28 Feb 08
Senior Lecturer, Ophthalmology	University of Auckland North Island, NZ	28 Feb 08
Residency in Equine Surgery	Massey University North Island, NZ	16 Mar 08
Senior Scientist, Life Cycle Assessment	AgResearch NZ	20 Feb 08
Senior Clinical Psychologist	Massey University North Island, NZ	4 Mar 08
Massey University Postdoctoral Fellow in Theoretical Physics	Massey University NZ	29 Feb 08

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By Dr Gerd Winter

Senator Kim Carr
MINISTER FOR INNOVATION, INDUSTRY, SCIENCE AND RESEARCH

Who is Kim Carr?

The history of science in Australia is a tale of great potential marred by a lack of industry infrastructure capable of developing the ideas and discoveries generated by Australian scientists. It is also marked by the lack of a cohesive political strategy to boost the awareness in the public eye for what scientific research has to offer. A string of ministers, including the long-serving and popular Barry Jones, have struggled to bring science into the limelight within junior portfolios. The missing clout of science research in cabinet was felt in economically difficult times with severe funding cuts to the public research sector.

There is now widespread consensus, however, that Australia has to do more to profit from its high quality science research. In addition, science has experienced a boost in profile generated by issues such as climate change, water resources and energy. Australia has now a federal Ministry for Innovation, Industry, Science and Research implying an integration of science, technology and industry policy within a conceptual framework of innovation.

The ministry is led by the Victorian Senator Kim Carr. Known as a leading figure in the Victorian Socialist-left faction, the inclusion of Carr in the self-proclaimed fiscally conservative Rudd Cabinet may have come as a surprise to some. However, Carr is well versed with the issues of science and industry, having already been Shadow Minister with this portfolio under Latham. Since entering the Senate in 1993 he has engaged in policy issues concerning education, science and, in particular, manufacturing. "Coming from Victoria these are bread and butter issues for Labor politicians," says Carr, who comes from a working class background. "My father was a boilermaker and I was brought up to value the creativity of skilled labour."

He joined the Labor party as a 20 year-old and then worked for more than 10 years as a secondary school teacher at the former Glenroy Technical School in the northern suburbs of Melbourne; an area that since the early 80s has experienced a marked decline in the manufacturing industry, and in its wake high levels of unemployment.

In 1988 he left teaching and became policy analyst and advisor to the then Victorian Minister for Conservation, Forest and Lands, and Minister for Education, (and later Premier of Victoria), Joan Kirner. He returned briefly to teaching following Kirner's election loss to Jeff Kennet in 1992. A window of opportunity back into politics opened again when John Button retired in the Senate, after serving a decade in the Hawke government as Minister for Industry, Technology and Commerce. Carr now holds a similar portfolio with the very notable difference of having additional responsibility for University research.

One who knows Kim Carr well is Democrat Senator Natasha Stott Despoja who entered the Senate in 1995 as the Democrat's spokesperson for Science, Research and Higher Education. She and Carr have since worked on very similar portfolio issues. "I think he is genuinely passionate about innovation and about industry and he genuinely believes education and research is an investment not a cost," she says of Carr.

Particularly when it comes to industry policy, however, Stott Despoja says his reputation for more traditional Labor views could put Carr at odds with some areas of the modern-reformist Rudd Government. But referring to the announced review of the national innovation system she

also sees a great opportunity for him to "merge that modern and old school" in what she believes is a necessary reform. She expects Carr's approach will be inclusive across business, industry, science and research and she hopes, given the importance of the area for Australia's future, that this will include members of other parties, notably the opposition.

He has moved fast in laying out a series of initiatives which go beyond a mere makeover of the current R&D system with some efficiency gains. Carr wants a broad change in the culture of science in this country with 'the public good' his overriding objective. "I seek a change in the relationship between our research agencies, our universities and the private sector. I am seeking a change in the attitude of researchers towards one another. I am seeking higher levels of collaboration. And I encourage scientists to assist me to develop an environment which creates a culture of innovation."

He sees civic engagement as a core function of university scientists. "Universities are as much at home with the world of business as at home with the world of civil society," he says, but also points out that there are direct benefits for the research sector. "If the public knows the value of research work that is being undertaken then it is more likely that they have confidence and are more sympathetic to resources being spent to enhance our capacity to meet the fundamental challenges facing us."

He sees healthy debate as part of the process, which the announced charters of debate will assist by defining the relationship between government and research agencies. But he emphasises that "this is not a one way street, this is about debate not handing down tablets in stone."

The 'public good' is also the basis of the initiated review of the National Innovation System, which, he says, will go beyond the creation of new products, new markets and new processes within the enterprise system, beyond a narrow commercial definition of innovation. He heavily criticises the commercial focus of his predecessors, particularly in regard to the CRCs. "This was an anathema to what the program was all about" he says. "Innovation is not about turning our back on investment support, nor is it about turning our back on public good research... Research on something like the Cane Toad is unlikely to be funded by the private sector but it is a matter of major public importance."

As Stott Despoja puts it, "He is driven by some very clear philosophies and indeed ideologies and I don't think he'd shy away from it, he would be quite proud about having some strong traditional Labor views."

There may be challenges ahead for Carr that relate to his very active role in Senate estimate hearings. An outspoken critic of the organisational reforms towards revenue-based research, which the CSIRO undertook in early 2000, he used senate estimate hearings to persistently grill the CSIRO leadership, notably the current chief executive, Dr Geoff Garret, a management he will now have to work with as a science minister.

"Kim has a forensic eye for detail and he can be extremely passionate about issues, and when you are that passionate and you expose flaws in the system you can sometimes alienate individuals and groups, and that can be seen as going too far," says Stott-Despoja.



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

Australian & New Zealand

2008

EcoEDGE 2

14 to 16 February, Melbourne, VIC

AUSTRALIA 2008

15 to 16 February, Sydney, NSW

Women's Health

16 February to 1 March, Sydney, NSW

3rd International Solar Cities Congress 17

to 21 February, Adelaide, SA

3rd International Conference of the CRC for

Construction Innovation

12 to 14 March, Surfers Paradise, QLD

World Congress of Health Professions

26 to 29 March, Perth, WA

2nd International Salinity Forum: Salinity, Water and Society - Global issues, local action

31 March to 3 April, Adelaide, SA

2nd International Salinity Forum

31 March to 3 April, Adelaide, SA

State Natural Resource Management Conference 2008

1 to 3 April, Perth, WA

Safety In Action 2008

29 April to 1 May, Melbourne, VIC

10th International Paediatric and Child Health Nursing Conference

30 April to 2 May, Darwin, NT

38th Annual Scientific Meeting of the Australian and New Zealand Society of Nuclear Medicine

1 to 6 May, Gold Coast, QLD

10th Breast Care Nurses Conference 2008

1 to 2 May, Perth, WA

Sustainable Energy Conference: Enviro 08

5 to 7 May, Melbourne, WA

17th World Hydrogen Energy Conference

15 to 19 June, Brisbane Convention and Exhibition Centre, QLD

17th World Hydrogen Energy Conference

15 to 19 June, Brisbane, QLD

5th International Conference on Information Technology and Applications.

23 June, Cairns, QLD

ICO-21 - 21st Congress of the International Commission for Optics

7 to 10 July, Sydney, NSW

OECC/ACOFT 2008

8 to 10 July, Sydney, NSW

Vision, Memory, Spectacle

9 to 12 July, Perth, WA

Revising Gender and Sexuality in Nation, Race and Identity

11 July, Brisbane, QLD

Australian Earth Sciences Convention 2008

20 to 24 July, Perth Convention Exhibition Centre, WA

5th World Congress of Society of Environmental Toxicology and Chemistry

3 to 7 August, Sydney, NSW

Coast to Coast 2008

18 to 22 August, Darwin, NT

12th International Lupin Conference

14 to 18 September, Fremantle, WA

Australasian Sexual Health Conference 2008

15 to 17 September, Perth, WA

20th Australasian Society for HIV Medicine (ASHM) Conference

17 to 20 September, Perth, WA

Third IAPR International Conference on Pattern Recognition in Bioinformatics

15 October, Melbourne, VIC

Terry Leach Symposium 2008

17 October, Sydney, NSW

6th Australasian Viral Hepatitis Conference

20 to 22 October, Brisbane, QLD

Horizons in livestock management

28 to 30 October, Christchurch, NZ

EPSM ABEC 2008 - Innovations in patient care

16 to 20 November, Christchurch, NZ

SOIL - The living skin of Planet Earth

1 to 5 December, Palmerston North, NZ

Inorganic Chemistry Conference 2008

14 to 18 December, Christchurch, NZ

Evison Symposium on Seismogenesis and Earthquake Forecasting

18 to 22 December, Wellington, NZ

5th World Congress of Pediatric Cardiology and Cardiac Surgery

22 to 26 June, Cairns Convention Centre, QLD

10th International Congress of Ecology

1 to 30 August, Brisbane, QLD

10th International Congress of Medical Librarianship

31 August to 4 September, Brisbane, QLD

12th International Dental Congress on Modern Pain Control

14 to 17 October, Gold Coast, QLD

World Congress of Internal Medicine

20 to 25 March, Melbourne, VIC

Overseas conference

American Association for the Advancement of Science (AAAS) annual meeting 2008

United States

Seventh International Conference on Computation in Electromagnetics

7 to 10 April, Brighton, UK

POWER-GEN Renewables Energy & Fuels

19 to 21 February, Las Vegas, USA

Washington International Renewable Energy Conference and tradeshow

4 to 6 March, Washington, United States

World Sustainable Energy Days 2008

5 to 7 March, Wels, Austria

Green-Ex - The North American Green Lifestyle Home Show & Energy Expo

8 to 9 March, London, Ontario, Canada

8th World Biomaterials Congress

28 May to 1 June, Amsterdam, the Netherlands

BioEnergy 2008 Conference and Exhibition

3 to 5 June, Prince George, British Columbia, Canada

ESOF 2008: Euroscience Open Forum

18 to 22 July, Barcelona, Spain

33rd International Geological Conference

5 to 14 August, Vancouver, BC, Canada

BA Festival of Science 2008

8 to 12 September, London, United Kingdom (UK)

European Meteorological Society Annual meeting

29 September to 3 October, Amsterdam, Netherlands

2009

5th World Water Forum

16 to 22 March, Istanbul, Turkey

6th World Conference of Science Journalists

London, UK Dates to be confirmed

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