



Australian science stories – AAAS, February 2007

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Aussie yabbies survive by connecting to underwater broadband

Like sharks, Australian yabbies have a 'sixth' sense, the ability to listen to electrical signals that alert them to prey or predators, according to University of Melbourne researchers.

"We have provided the first evidence that yabbies 'listen' to electrical fields."

Yabbies are small freshwater crayfish.

A busy left hand causes crashes to the right

Someone using their left hand is four times more likely to collide with an object on the right than on the left, a new study from the University of Melbourne has found.

The published study has important implications for road, industrial and maritime safety.

Women scientists produce higher quality work

An international study led by the University of Melbourne reveals that, while female scientists produce better quality science, they are less productive early in their careers, and thus have to play catch-up to their male counterparts.

Early cochlear implants get deaf toddlers talking

Deaf babies and toddlers can develop normal language skills using cochlear implants according to a Melbourne study.

"Prior to the introduction of early screening tests and cochlear implantation, profoundly deaf children experienced significant delays in language development."

Satellites measures soil moisture

Australian farmers will soon be able to measure soil moisture in paddocks from data collected by a NASA/ESA satellite.

Farmers will be able to obtain predictions about soil moisture and crop yield out to three months. This will help them to make critical decisions about what to plant and when, their likely crop yield." Dr Walker said.

Cold war gravity detector finds ore deposits

BHP Billiton has developed an airborne gravity system for mapping mineral deposits, known as Falcon.

Installed in a small aircraft, Falcon measures minute changes in the earth's gravity. Areas which once took years to cover by ground surveys are now done in days.

CSIRO demonstrates world's fastest wireless link

CSIRO researchers have demonstrated the fastest and most efficient wireless link ever achieved.

The six gigabits per second over a point-to-point wireless connection. Shakespeare could be transmitted over this six gigabit link in under seven thousandths of a second or a full DVD movie in just over six seconds.

Found - the red apple gene

CSIRO researchers have located the gene that controls the colour of apples – a discovery that may lead to bright new apple varieties.

Australia's venomous creatures not all bad news

Australian biotechnology companies and researchers are discovering that Australia's venomous creatures might not be all bad news. They may in fact bring us the medical drugs of tomorrow.

Deadly cone shell snail

Two companies are developing therapies for severe pain derived from the venom of a deadly cone shell snail found on the Great Barrier Reef.

Taipan snake venom

ElaCor Pty Ltd, is developing a therapeutic for congestive heart failure derived from Taipan snake venom.

Australian Common Brown snake

QRxPharma Pty Ltd is developing a pro-coagulant useful in situations to control bleeding and tissue sealing, such as following surgery. FactorX is derived from the venom of the Australian Common Brown snake.

Spiders, Scorpions, and Centipedes

If snakes aren't your thing then how about spiders? Australian Tarantulas Pty Ltd specialises in screening the venom of spiders, scorpions, and centipedes. The company even has its own Australian Venom Zoo located near Cairns.

Virtual map of the sheep genome

The 'virtual sheep genome' – a physical DNA map of more than 98 per cent of the sheep genome – has been made publicly available by CSIRO. It contains the 'best bet' about where the sheep's vast amount of hereditary information can be found on its 26 chromosomes.

A real air guitar

CSIRO has 'built' a shirt which could fulfil the fantasy of anyone who has, in the privacy of their homes, jammed along with one of

rock 'n roll's great lead guitarists.

The 'wearable instrument shirt' enables users to play an 'air guitar' simply by moving one arm to pick chords and the other to strum the imaginary instrument's strings.

'Air shower' set to cut water use by 30 per cent

As Australians become increasingly alert to the importance of using water wisely in the home, CSIRO researchers have found a way to use a third less water when you shower – by adding air.

The scientists have developed a simple 'air shower' device which, when fitted into existing showerheads, fills the water droplets with a tiny bubble of air. The result is the shower feels just as wet and just as strong as before, but now uses much less water.

Wine industry 'winners and losers' from climate change

Climate change will dramatically alter the growing season for Australian grapes and affect the wine styles produced here, according to new University of Melbourne and CSIRO research.

Australia, South Africa, short-listed for giant telescope

Australia has been short-listed – along with South Africa - to host the Square Kilometre Array (SKA), a giant next-generation radio telescope being developed by scientists in 17 countries.

The proposed core site in Australia is Mileura station, 100km west of Meekathara in Western Australia. Other antennas would be distributed over the continent; still more might be placed in New Zealand.

Parkes finds unexpected 'heartbeats' in star

Astronomers using CSIRO's Parkes telescope in eastern Australia have found that a "magnetar" – a kind of star with the strongest magnetic fields known in the Universe – is giving off extraordinary radio pulses, which links this rare type of star with the much more common "radio pulsars".

Research offers hope for alcoholics

Scientists at Melbourne's Howard Florey Institute have discovered a system in the brain that stops an alcoholic's craving for alcohol.

A group of cells in the hypothalamus produce Orexin, which was originally implicated in the regulation of feeding, but it soon became apparent that Orexin was also involved in the 'high' felt after drinking alcohol or taking illicit drugs.

Is wildlife birth-control safe?

Australian scientists are developing a contraceptive vaccine that aims to control populations of wild animals, such as rabbits and foxes.

But UNSW genetics expert Professor Des Cooper warns that the immuno-contraception method is not fully effective and is manipulating natural reproduction in ways that can't be predicted or controlled.

Proponents of the technique, which was first tested nearly 20 years ago, regard it as more humane than the conventional methods of controlling wildlife populations, such as shooting, trapping, poisoning or viral diseases.

Soft-cell approach cuts animal tests

A new way to test the safety of the air we breathe is proving faster, cheaper and more humane than exposing laboratory animals to airborne chemical hazards, say UNSW scientists.

The new in-vitro technique directly exposes human cells to airborne toxicants and measures cytotoxic effects.

Magnetic powder cleans oily penguins

Victoria University researchers hope to clean penguins using tiny 'oil drinking' magnetic particles, consisting of a finely-divided iron powder that is non-toxic and non-irritating.

Low GI sugar?

Sugar cane could contribute to the fight against prostate and breast cancer.

Queensland sugar researchers are finding high amounts of compounds that could be used to make products, such as antioxidants, foods with a low glycemic index (GI) and other dietary supplements.

Biodegradable plastic from sugarcane?

Queensland researchers are looking to turn sugarcane plants into highly productive plastic factories. Genes from bacteria – that naturally produce these biodegradable plastics – have been successfully incorporated into the sugar plant which then goes on to make plastic within their cells.

Meningococcus and golden staph identified in hours rather than days

Deadly bacteria can be accurately identified and tracked within hours rather than days and at a cost saving of up to 90% by using computer-based technology developed by the CRC for Diagnostics.

Each strain of bacteria has a unique set of fingerprints or arrangement of genes. Now, rather than having to examine around 3000 pieces of genetic material for each strain of bacteria, the program has pinpointed just 7 key pieces of information for testing.

Queensland scientists fine tune drugs for herpes

A patient's ability to fight human cytomegalovirus, a type of herpes virus, can be tracked using new technology developed by the Co-operative Research Centre for Vaccine Technology.

The new test measures the level of special immune cells (called CD8 T cells) in blood that protect against HCMV. By monitoring these cells, physicians can assess whether a patient needs expensive, and often, toxic treatments or is able to fight off the virus without them. Previously, patients were given these treatments regardless of their levels of immunity.

Tobacco goes cold turkey

The tobacco plant is giving up cigarettes to provide safer and cheaper pharmaceuticals.

Tobacco is set to become a valuable source of human vitronectin – a protein used in pharmaceuticals for wound and tissue repair and in medical research to improve human health.

Prostate cancer trial

The Mater Medical Research Institute is trialling a prostate cancer vaccine using a new 'smart state' antibody developed and produced at MMRI.

More sleep for newborns (and parents)

Driving the baby around the block till he sleeps? A Queensland company has developed a cot that emulates the motion of a car, helping babies sleep soundly.

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