A Monash research team led by Professor Steve Wesselingh (left) and including researcher Mr John Huang have successfully trialled an edible measles vaccine in plants. Picture: GREG FORD

Edible vaccines the key to better immunisation

BY DAVID BRUCE

Monash scientists have successfully grown a genetically engineered plant containing a measles vaccine in a technique that may eventually lead to simpler and cheaper immunisation programs for a range of viral diseases, including HIV and malaria.

Publishing their results this month in the prestigious journal Vaccine, the Monash research team from the Infectious Diseases Unit based at the Alfred Hospital concluded that an edible vaccine was possible.

"This study demonstrates that oral vaccination utilizing transgenic plants is a viable approach to the development of a novel measles vaccine," the research team reported.

"Availability of the vaccine in an edible form as a constituent of a fruit or vegetable crop would enhance vaccination coverage by providing an inexpensive and reliably heat-stable package for distribution. Such a vaccine would have the potential to enable high rates of vaccination to reach the targets required for global eradication."

Led by Professor Steve Wesselingh, the research team successfully produced a tobacco leaf containing a viral protein found in the measles virus. When the plant was processed and fed to mice, their immune system responded by producing protective antibodies.

The research team is now developing the protein in a range of foods including rice and lettuce and has recognised the potential for the protein to be incorporated into baby food.

"There is no real reason why we couldn't be working with any type of food, but we believe that rice flour, when mixed with breast milk as baby food, is a simple and cheap option even for poor or remote communities," said Professor Wesselingh.

The research team has begun experimenting with a combination of edible and injectable vaccines in early HIV and malaria vaccines. "The answer to the problems of boosting HIV and malaria in many parts of the world lies in developing a vaccine that can be easily administered. There is no doubt about that."

Measles is a highly contagious viral disease which, in the most serious cases, may lead to pneumonia, encephalitis and even death. Although measles can be effectively prevented by a 'live' measles vaccine injection, it still causes up to one million deaths each year, mostly among young children in developing countries. In these countries, injectable vaccines are inhibited by many factors, including the need to provide a stable and cold environment during storage and transportation and a lack of trained medical staff to administer the vaccine.

In other countries, including Australia, the United Kingdom and the United States, measles outbreaks are still common due to lowering rates of immunisation among some ethnic groups and among some people concerned about the side-effects of the vaccine.

Continued on page 2
Recent changes to class action law a class act

**BY FIONA PERRY**

State Parliament was acting on the recommendations of two Monash University academic lawyers when it enacted changes to Victorian class action law late last year. The changes were made to bring about improved access to justice for multiple claimants and to ensure the Victorian regime closer to its successful Federal Court counterpart.

Under the changes, Parliament repealed Sections 34 and 35 of the Victorian Supreme Court Act and added new provisions to Part 4A of the Act.

These were recommendations put forward by senior lecturer in Monash's Department of Business Law and Taxation Mr Vince Morabito and senior law lecturer Mr Judd Epstein in their report, *Class Actions in Victoria: Time for a New Approach*, commissioned by the Victorian Attorney-General's Law Reform Advisory Council.

Mr Morabito said that in part, the amendments to the act meant that Victoria was the first state to adopt the 'opt-out' scheme, which has applied in the Federal Court since 1992.

"Under this scheme, those eligible to join a class action no longer have to write to the lawyer in charge of the case to register as a member as they used to under the 'optin' scheme - they are now automatically eligible for an entitlement to be paid out of the settlement," he said.

"Those who do not wish to take part are given the opportunity to exclude themselves," Mr Morabito said.

Mr Epstein said the 'opt-out' scheme was preferable to the former regime, as it increased access to justice for those who wouldn't be able to afford it on their own.

"The 'opt-out' scheme creates a non-financial risk for people who, due to ignorance or psychological or economic barriers, may not sign up for a class action."

"Under the 'opt-out' regime, there is the possibility that claimants will gain real benefits from the case without having to take individual action."

The adoption of the new laws has also ended longstanding procedural problems with class action laws in Victoria, Mr Morabito said.

Justice for those who wouldn't be able to afford it on their own. The 'opt-out' scheme creates a non-financial risk for people who, due to ignorance or psychological or economic barriers, may not sign up for a class action. Under the 'opt-out' regime, there is the possibility that claimants will gain real benefits from the case without having to take individual action. The adoption of the new laws has also ended longstanding procedural problems with class action laws in Victoria.

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**International award for paleontologists**

**BY DEREK BROWN**

Monash University paleontologist Professor Pat Vickers-Rich and Dr Tom Rich from Museum Victoria have gained international recognition for more than 20 years' work digging into Australia's ancient past.

At a recent ceremony in the US, the National Geographic Society's Committee for Research and Exploration presented the couple with a $30,000 award for their investigations of vertebrate paleontology in Australia. Professor Vickers-Rich said she and her husband had been funded by the society since the 1970s for work sites along the Victorian coast as well as in central and northern Australia.

"The award represents three decades of comprehensive work gathering and interpreting fossils to see what life was like in Australia during and after the age of dinosaurs," she said.

"At Flat Rocks, a site on the Victorian coast near Inverloch, we have been looking for evidence of animals including dinosaurs and mammals that might have lived in the region more than 150 million years ago. At times we've even dug a mine in the cliff face of the Otway Ranges in an attempt to get to the rocks that contain the fossils." Professor Vickers-Rich said the couple used Australia's vast diversity to the different land that existed 100 million years ago because the continent was further south and joined to Antarctica. Australia was then part of the polar region, prone to long, cold winters and nights that lasted for three months.

"Much of the couple's work at Flat Rocks was aimed at establishing that dinosaurs were able to survive in the polar conditions of ancient Australia. Flat Rocks has been the site of many discoveries by Professor Vickers-Rich, Dr Rich and their team, such as the dinosaur Quantassaurus, named after Australian airline Quantas, and Ausirosuchus nyanza, thought to be the oldest placental mammal ever found.

"Lawyers representing class action plaintiffs have routinely avoided the Victorian Supreme Court since 1995, after judges became frustrated with the limitations of the class action laws and asked state legislators to repeal them," he said.

"After that, lawyers wouldn't even think of going to the Victorian Supreme Court to lodge a class action - they would go straight to the Federal Court, despite the case falling within the Supreme Court's jurisdiction."

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**Former governor to present lecture**

Former Governor of Hong Kong and member of the European Commission the Right Honourable Christopher Patten CH will present the annual Sir Robert Menzies Lecture this month.

The annual lecture was inaugurated in 1978 by the Sir Robert Menzies Trust to honour the name of Menzies and to highlight issues of public importance.

The lecture, which is supported by the Monash University Liberal Club, will be held on Friday 20 April at 6.30 pm at Queen's Hall, Parliament House, Spring Street, Melbourne.

Tickets cost $10 from the Sir Robert Menzies Lecture Trust, GPO Box 1101J, Melbourne, 3001. Monash University students may obtain tickets free of charge by contacting the Liberal Club through its mailout at the Clayton campus.

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**NEW CHAIR FOR JEWISH STUDIES CENTRE**

Immigration history expert Professor Andrew Markus has been appointed the inaugural chair of Jewish Civilisation at Monash University. Professor Markus took up the position in February.

He was previously deputy chair of Monash's Centre for Migrant and Intercultural Studies and has been a chair of the education committee of the Melbourne Holocaust Museum and Research Centre for the last three years.

As director of the centre, Professor Markus says he intends to introduce postgraduate programs and build the centre into an institution of international research excellence in Jewish studies.

His research interests have focused on the history of immigrant groups, race relations and racial thought.

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**Edible vaccines the key to better immunisation**

**Continued from page 1**

The quest for new and better ways to immunise people against infectious diseases has led to a variety of alternatives to injections, with the food-based vaccine research proving the greatest potential.

Current measles vaccines are made from the actual virus and work by priming the immune system to attack it if it becomes exposed to a full assault of the measles virus. In contrast, plant-based vaccines rely on the measles virus genes for the H protein gene both genetically cloned into plants.

The H protein sits on the outside of the virus and has a role in provoking the immune response in the body. The edible vaccines, therefore, do not contain the complete "live" virus - only the genes needed to trigger the immune response.

The Monash researchers are working closely with scientists at the CSIRO Plant Industry and at the University of Melbourne.
Monash campus opens for business in South Africa

By June Yu

A group of South African students have taken their first steps into a new world of international education by being the first to enrol at Monash South Africa. The opening of this campus, Professor Anderson said, would broaden their horizons by providing opportunities for all Monash students to contribute a great deal to their own countries, whether that be in South Africa, Malaysia, Australia or anywhere else.

"South Africa campus offers international education by being the first to enrol at Monash South Africa. "

Monash campus opens for business in South Africa

First to enrol at Monash South Africa, opening of this campus, "Professor Anderson said, would broaden their horizons by providing opportunities for all Monash students to contribute a great deal to their own countries, whether that be in South Africa, Malaysia, Australia or anywhere else.

"South Africa campus offers international education by being the first to enrol at Monash South Africa. "

Pro vice-chancellor Professor John Anderson welcomed the first students to the new Monash South Africa campus.

Program to help improve women’s health in UAE

By Allison Harding

Women’s health issues are now receiving greater attention in the United Arab Emirates, thanks to a new Monash University program.

"The Ministry of Health in Sharjah has identified women’s health as a priority area, as they believe there are health issues affecting women which must be addressed," Professor Piterman said.

Separation can be devastating for military personnel and their families, but regular contact with home helps ease the burden, a Geelong herald said. Mr Francisco Bridon, in Riyadh, discovers. Picture: AAP

Probe into the human cost of military service

By Allison Harding

Separation can be devastating for military personnel and their families, but regular contact with home helps ease the burden, a Geelong herald said. Mr Francisco Bridon, in Riyadh, discovers. Picture: AAP

Mr Sieler says he would investigate the types of support services families utilised, what they found helpful, and what else they needed during separation. He said the return of family members to Australia had been a problem as well.

The reunion time is thought to be the most stressful time for families, they have to re-form in a way, he said. "It takes time for a couple to re-adjust and integrate back into being a family unit."

He said he hoped to have a project report for the DCO, which was contributing $15,000 to the project, by the end of the year. Further corporate and individual sponsorship would also be welcome, he said.

Mr Sieler can be contacted by email at philip.siebler@defence.gov.au

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Schools should accommodate Indigenous students: researcher

By Stuart Heather

Education authorities are not trying hard enough to improve the poor attendance of Indigenous students in Australian schools, according to Professor Colin Bourke of Monash University's Centre for Australian Indigenous Studies.

"School Attendance: Improving the educational systems in the states and territories," Professor Bourke says. "We find that many Indigenous students are not going to school daily, and Indigenous students' poor school attendance rate can be partly attributed to a curriculum that does not reflect their values or beliefs," says Professor Colin Bourke. Picture: TODD CONDIE, courtesy of Kari Moli.

"Indigenous students' own values, history, customs and beliefs are not considered important in the classroom." Law academic achievement and the likelihood of leaving school earlier lead to poor school attendance. The Monash report made 14 recommendations in areas including education policy, school management, curriculum, teacher training and such things as the school calendar.

Whether Indigenous students make up all or only a tiny part of the student body at a school, Professor Bourke argues that the education system needs to be flexible to accommodate their needs.

"Schools in the tropical north are in serious trouble during the 'wet' season when children have little to occupy themselves and classes are in danger of being disrupted." When the Indigenous community is organising many activities, it would be wrong to ignore the conventional calendar of northern Australia and respond to the local situation.

Professor Bourke also argues against sending young teachers from the cities without sufficient preparation and training to rural areas. The lack of language, cultural and social understanding of Indigenous people creates a big gap between students and teachers, he says.

"We would also like to see a premium attached to teaching Indigenous students. It would be great if this was viewed as a plus in a teacher's career," he says.

Researcher explores hidden realm of maths values

By Kay Ainsell

When students learn how to solve an equation, they are also absorbing cultural values that can mould a young person's outlook.

These values vary between cultural groups, so when a teacher from overseas takes a maths class in Australia, a clash of values can follow.

Monash Faculty of Education researcher Mr Wee Tiang Seah is exploring this terrain for his doctoral thesis, working with mathematics teachers from overseas to investigate how they are adapting to teaching maths in Victoria.

Mr Seah says a belief that mathematics is a universal language has left the issue of values in maths education largely unexplored.

"In certain foreign cultures, a student's future in life is determined by how well they do in school. The message they learn from the classroom could be that there is no room for mistake in life.

"Withrote learning, which is a common learning style in some countries, students may get the message that what matters in mathematics, and in life as well in getting things right. This contrasts with the idea of exploration, which is about risk-taking and the acceptance of failure."

A teacher from a culture may find that the drills so valued in their home country are not as important in Australia. The teacher's response could vary from ignoring the potential cultural clash brought about by a difference in teaching styles to absorbing the new system wholeheartedly, or various degrees of adjustment in between.

Mr Seah hopes his PhD will ultimately lead to the development of strategies that will help teachers of all subjects deal with value conflicts.

"There is an increasing number of multicultural teaching professionals in schools in Australia, and in Victoria in particular. These teachers need to know they are not alone in negotiating value differences or conflicts," he said.

"A better understanding of migrant teachers' situations could help them in the classroom, especially when Victoria currently has such a shortage of maths teachers."

Fun start to uni year

Two new Monash students get into the spirit of things with some colourful balloon art made by a street artist during Orientation week, held in late April at Monash's six Victorian campuses. Orientation marks the beginning of the university year for thousands of new Monash students, and gives them the opportunity to familiarise themselves with their new surroundings, find out details about their courses and get to know their lecturers, tutors and other new students in a carnival-style atmosphere. DJs and bands, jumping castles and comedians were just some of the entertainment enjoyed by the students.

Picture: GREG FORD

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PhD researcher and former maths teacher Mr Wee Tiang Seah hopes his research will help migrant teachers deal with value conflicts in the classroom.

Picture: KEN CHANDLER

Schools

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The 'At Monash' seminar, which aims to give senior secondary students an overview of course and career options in broad interest areas, will be held in May. Seminar speakers will include academic staff, current students and graduates. Booking forms for all seminars will be sent to schools shortly.

Details are as follows:

Wednesday 9 May

Art and Law

7.30 pm to 9 pm

Robert Blackwood Concert Hall

Clayton campus

Tuesday 22 May

Information Technology and Engineering

7.30 pm to 9 pm

Robert Blackwood Concert Hall

Clayton campus

Tuesday 29 May

Science, Pharmacy and Medicine

7.30 pm to 9.30 pm

Robert Blackwood Concert Hall

Clayton campus

Wednesday 30 May

Business and Economics

7.30 pm to 9 pm

Robert Blackwood Concert Hall

Clayton campus

For more information, contact the Prospective Students Office on 61 3 9905 4164.

Explore Monash

The Explore Monash program is specifically designed for regional and interstate families and runs during the school holidays. Students can choose to experience either a metropolitan campus or a rural campus.

The metropolitan visit will take place at the Clayton campus and will include an optional visit to either Berwick, Peninsula, Paraburdoo or Sunraysia campuses in the afternoon. The rural visit will be held at the Gippsland campus. Activities include an introduction to Monash, a tour of the campus, visits to academic areas of interest to the student and an inspection of student accommodation.

The first Explore Monash session will be held on Thursday 29 April at the Gippsland campus. The metropolitan session will be held at the Clayton campus on Friday 30 April.

For more information, contact the Prospective Students Office on 61 3 9905 4164.
Does the very nature of modern, competitive nation-states preclude ecologically sustainable development, asks political scientist DR ROBYN ECKERSLEY

OPINION

The global ecological crisis has thrown down new challenges for the modern state in the past four decades.

Domestically, states have responded to public environmental concerns by creating new environmental policies and agencies and, in some cases, overarching strategies for sustainable development that affect all policy areas and aspects of society.

Yet these modest environmental initiatives have enjoyed only limited success and now face a new era of fiscal austerity combined with pressures to dismantle environmental trade restrictive measures and to deregulate and privatise.

In place of the ongoing struggle of social democracy and the welfare state, we now find the ideological ascendency of neo-liberalism and the "competition state", the primary task of which is to make economic activities within the state more competitive in global terms.

Green demands for the state to orchestrate ecologically sustainable development are being eroded by decisions in the decision-making process that are affected by changes in national security.

Histologically, the defence of the state territory, military success, and the exploitation of natural resources and the environment for the purposes of national economic development, have been widely understood as overriding state imperatives or "interests" that are common to all states.

Indeed, the exploitation of natural resources within the territory has sometimes been justified as a "nation building exercise" or intimately linked with national security.

To green democrats, the task of "enhancing environmental justice" goes beyond developing green competitive strategies to strengthen environmental capacity. It requires a rethinking of cultural, democratic and institutional changes that effectively transform the moral purpose of the state to include "higher ecological guardianship".

Such a green democratic state would be concerned to represent or otherwise consider the welfare of not just its citizens but all those potentially affected by domestic activities that carry harmful ecological consequences.

Dr Robyn Eckersley is a senior lecturer in the School of Political and Social Inquiry at Monash University. This is an edited version of an article first published in the Winter 2000/1 issue of ECPR News, the journal of the European Consortium for Political Research. Dr Eckersley is co-director of a workshop on "The Global Ecological Crisis and the Nation State" at the Grenoble sessions of the ECPR this month in France.

Green state vs competition state: the democratic challenge
**Piano virtuoso visits Monash**

**BY PACO PENNY**

An internationally acclaimed Italian pianist whose work has been described as "a religious experience" will visit Monash University this month to give a series of recitals, masterclasses and seminars.

Professor Andrea Bonatta, who is also a famous musicologist, has been invited to Monash as a guest of the School of Music - Conservatorium.

The head of the school, Professor Margaret Karmont, said Professor Bonatta's expertise and reputation as a pianist and a musicologist were rare in the music world.

"As well as being a world-renowned pianist, Andrea Bonatta is a highly regarded musicologist," she said.

"His recent book on Brahms earned him great praise in the international press. This is a rare special edition, and allows him an exceptional understanding of the music and its historical context."

"The School of Music - Conservatorium continues its mission to introduce and promote the cultural and educational initiatives of our schools," she said.

*Piano virtuoso visits Monash* by Paco Penny.
Prime Minister John Howard's delay in criticising Pauline Hanson following her 1996 maiden speech to Parliament, and his government's stance on nativ­
tide and immigration, signal a dangerous
growth in race politics in Australia, warns a Monash academic.

In his new book, Race: John Howard and the Remaking of Australia, Professor Markus from Monash's School of Historical Studies analyses the politics of race in Australia over the past 15 years. A central part of the book focuses on John Howard's positioning of the Liberal Party during his years as Leader of the Opposition and as Prime Minister, said Professor Markus. "The book argues that Howard alienated moderate Aboriginal leadership, brought the process of reorienta­tion to a halt, soured multicultural­
policies and significantly changed immigration," he said.

According to Professor Markus, since the mid-1980s Mr Howard has attempted to marry the Liberal party's "dry" market-driven economic policies with a conservative stance on a range of social issues - creating a fundamentally
different policy contradiction in the process.

"On one hand, his government consistently encouraged Australia to national­
ise is limited power, so you need to use hardware or software by making their luncheons are organised by the Monash University Alumni Office. For more.

Software Engineering head Professor allow users to access those resources. 

By JUNE YU

Large-scale computational problems could be solved quickly and efficiently with the help of a computer resource brokering system developed by Monash researchers.

PhD student Mr Rajkumar Buyya (above) said the brokering system, known as Nimrod-G, has applications for drug design, aerospace modelling, data mining and financial modelling. In the lucrative e-commerce field, the system could also be used to optimise sales and purchasing decisions.

Mr Buyya is designing the brokering system in collaboration with Distributed Systems Technology Centre research scientists Dr Jon Giddy and Dr Paul McColman, and Computer Science and Software Engineering head Professor David Abrahamson.

He said the system was developed for use in a grid computing environ­
ment, which links computer resources owned by different individuals and organisations all over the world into an integrated unit. These resources include PCs, workstations, supercom­
puters, storage systems and databases.

"Grid computing, also called peer-to-peer computing, is about sharing resources. Large-scale scientific problems or business applications can't be tackled using a single resource, due to its limited power, so you need to use several resources," Mr Buyya said.

He said Monash was part of the existing international grid environment that included resources from the United States, Europe and Asia.

Currently, Nimrod-G is being integrated into systems along with specialised grid software called Globus, developed by American researchers, to allow users to access those resources.

To cope with demand for grid access, the brokering system will regula­tion resource allocation in the grid computing environment.

"For example, my PC is often idle, so if 90 per cent of the computer power is wasted. Therefore, I could put trading software on the machine and specify that anyone can use the power in the machine as long as they pay a set rate per hour," he said.

Home and business users could also recoup some of the costs of their hardware or software by making their resources available to the grid.

Mr Buyya successfully ran a test on the system involving more than 200 jobs executed on Australian, Asian, US and European resources.

He said the brokering system would be ready for use in a production environ­
ment next year.

In May, Mr Buyya is co-chairing the International Symposium on Cluster Computing and the Grid. For more information, contact Mr Buyya on +61 3 9903 1969.
Glass artists find success

Four students and a lecturer from the Glass Studio in Monash's Art and Design faculty have recently won major Australian and international awards for their work.

Masters student Ms Holly Grace is one of 400 designers worldwide to have been selected by a jury to show her works at the prestigious Salone Satellite 2001 in Milan, Italy early this month. The Salone Satellite is part of the Milan Design Show and, according to the judges, features "the designers deemed to have the best chances of one day making a name for themselves among the international design aristocracy".

Graduate diploma student Ms Kristin McFarlane has won the Westin Melbourne Craftsmanship Award in the Ultimate Bombay Saphire Martini Glass competition, presented by Bombay Saphire Gin and Vogue Entertaining and Travel.

Masters student Ms Lisa Cahill has been awarded the Bullseye by Design Award. The award is an all-expenses paid trip to the Bullseye Glass Company factory at Portland, Oregon, in the US. During her one-month stay, Ms Cahill will work with the Bullseye team to create a range of designer wares for production and sale in the US.

Another masters student, Ms Niki Harley, has been included in the Corning Museum's Annual Review of World Glass. The New York museum holds the largest collection of glass in the world, and each year features 100 artists from around the world whose glasswork is judged to best represent the future direction of the medium. Ms Harley was included in the final 10 from 250 original submissions.

Glass lecturer Mr George Aslanis was awarded the Thomas Foundation Emerging Artist Award at the Ausglass Conference held in Melbourne in January. The judge for the award was eminent US artist Mr Martin Blunk.

Top: 'Kiln-formed Glass Bowl (2000)' by Lisa Cahill. Right: Artist Holly Grace with some of her works.