

under the microscope

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Today's scientists for tomorrow's children

The Children's Medical Research Institute (CMRI) is an independent organisation committed to unlocking the mysteries of disease. Our scientists investigate conditions such as birth defects, cancer, and epilepsy. Our philosophy is that major advances in prevention and treatment come from research into the fundamental processes of life. Our work is made possible by our community of supporters and Jeans for Genes®.

50 YEARS OF
DISCOVERY
CHILDREN'S MEDICAL RESEARCH INSTITUTE

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Professor Patrick Tam is stepping out in style on Friday August 1



Top scientist wears jeans with pride

Jeans for Genes contributes millions of dollars every year to fund research at the Children's Medical Research Institute (CMRI). The national fundraising campaign is helping scientists investigate conditions such as cancer, epilepsy, cataracts and blindness, and certain liver diseases. The scientists carrying out this research are world-leading researchers in their fields.

Professor Patrick Tam has just received one of the highest honours a scientist can receive in Australia. He was one of only 16 scientists to be elected to the Australian Academy of Science this year. Professor Tam has dedicated over 28 years to understanding birth defects in babies.

Jeans for Genes Day (Friday August 1) promises to be another fun-filled day. It's hoped that the Australian community will help us celebrate Professor Tam's achievement and contribute to his and his colleagues' further achievements by wearing their jeans and making a donation or buying a badge.

"Professor Tam is a world leader in the understanding of early mammalian embryonic development" says Richard Bray, Academy spokesman. "His research has put Australia on the global map of mammalian developmental biology."

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Director's desk



The recent opening of the Children's Medical Research Institute (CMRI) display at the National Museum of Australia in Canberra was attended by many of our wonderful friends, including some who have been supporters for most or (in one case) all of the 50 years of the institute's existence. This issue of *Under the Microscope* has an article about Mr James Fairfax, a great philanthropist who has supported CMRI with consistent, generous donations, and in many other ways, for the whole of our 50 years. It's a great privilege to belong to an organisation that attracts such loyalty and commitment, not only in our long-time supporters but also in those of you who have come on board much more recently. What is it about CMRI that has this effect? I think the answer lies partly in the Aussie can-do attitude of seeing a problem, in this case childhood ill-health, and banding together as a community group to do something about it. Part of the attraction lies in CMRI's independence, and its ability to achieve great goals without being dependent on government support. Part of it is the feeling of belonging to a worthwhile, high-quality organisation. Our fundraising committees throughout NSW and beyond, Jeans for Genes Genies, and many others clearly feel they belong to the CMRI family, and in a very real sense they are the CMRI. Yet another part of the answer is the commitment of our researchers – committed staff inspire committed supporters. Whatever the explanation for this wonderful loyalty, long may it continue!

A handwritten signature in black ink, which appears to read 'Roger Reddel'.

Professor Roger Reddel

James Fairfax: an amazing 50 years of generous support

During a half-century of research at the Children's Medical Research Institute (CMRI), generous philanthropist James Fairfax has been with us all the way, supporting CMRI through ongoing donations and membership on the early management boards.

James Fairfax began his relationship with the CMRI as a patient of Sir Lorimer Dods, who was the family's GP and co-founder of the Children's Medical Research Foundation (CMRF). He was a member of the first committee established in the late 1950s whose charter was to oversee the establishment and growth of the CMRF. He was also a member of the first Board following the incorporation of the CMRI in 1985 up until 1989.

In 1962 James Fairfax announced he would be making regular, substantial donations over the next ten years. The CMRF used these initial donations to establish the James Fairfax Surgical Research Unit and the James Fairfax Fellowship, "with the object of promoting research into surgical problems of infancy and childhood."

Dr Robert MacMahon became the first Fairfax Surgical Fellow, followed by Dr Earl Owen in 1967. Dr Owen's pioneering studies into microsurgery led to, among other things, a better understanding of donor organ rejection.

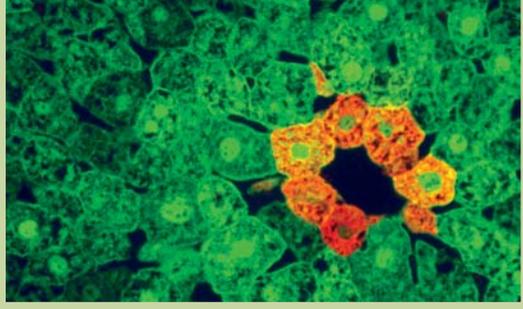
The television program, *These Children Are Ours*, was aired on the Fairfax-owned ATN7 station and was entirely based on interviews with CMRF researchers. For years Australians would wake up on a Sunday morning to watch the program and hear about the latest research into children's health.

James Fairfax's generosity has extended well beyond the promised ten years with steadily increasing annual donations and some very substantial additional contributions. His support assisted the purchase in 2001 of CMRI's state-of-the-art Mass Spectrometer.

The support of the Fairfax family has been a fantastic contribution to providing a healthy future for generations of children.



The official opening of research and administration facilities of the CMRI in Camperdown, 1986. Left to right: The Honourable Neville Wran, Mrs Jill Dunlop, Mr James Fairfax, Mr John Dunlop, Professor Peter Rowe



Mouse liver cells expressing a gene for green fluorescence, delivered to the cells by a virus known as a gene transfer vector

Viruses used to treat disease

Introducing active genes into cells to replace faulty genes is called gene therapy. Researchers from the Gene Therapy Research Unit (GTRU)* have been studying this approach for the treatment of diseases such as haemophilia, certain liver diseases and “boy in the bubble” disease.

Viruses have a natural ability to insert their DNA into cells making them useful tools for gene therapy. Viruses used in gene therapy – called gene transfer vectors – are “disarmed” to transfer only the therapeutic gene and not viral infections to the patient.

Treatment by gene therapy could be greatly improved if two or more genes could be delivered at the same time. “This would allow a lot more flexibility” says Dr Samantha Ginn, Noel Dowling Research Fellow in the GTRU. Chasing such improvements, Dr Julie Curtin, Dr Ginn and colleagues in the GTRU created a gene transfer vector containing two different genes, each with its own regulatory “switch” to control gene activity.

They discovered that the activity of both genes was reduced when delivered together in this way. The researchers then tracked down the reason for this reduced gene activity: they found that there was interference between the regulatory switches of the two genes. This phenomenon had been seen before with other gene transfer vectors but was not known to be a problem with the vector used by Dr Curtin.

“This information is invaluable to other researchers interested in using this promising gene transfer vector,” says Dr Ginn. “Gene therapy has already shown some success and the design of better gene delivery approaches is crucial for the development of gene therapy as a medicine.”

* The GTRU is a joint initiative between the Children’s Medical Research Institute and the Children’s Hospital at Westmead.

**The CMRI website has a new address
www.cmri.org.au**

The new address reflects the true nature of the institute as a not-for-profit organisation.



Dr Lily Huschtscha growing cells from families with a high risk of hereditary cancer

Silent genes and breast cancer

It is projected that one in 8 women by the age of 85 will be diagnosed with breast cancer, the most common cancer amongst Australian women. Survival rates are improving as a result of early detection and treatment.

Research into better diagnosis and treatments for breast cancer will improve survival rates even further. Scientists at the Children’s Medical Research Institute (CMRI) started studying breast cancer many years ago when they discovered an inherited abnormality in a key gene that results in a very high incidence of childhood cancers and breast cancer in other family members.

Now Dr Lily Huschtscha at CMRI has joined forces with other researchers in Sydney, Brisbane and Edinburgh to identify new markers for breast cancer diagnosis and more targets for anti-cancer treatments.

They have discovered four tumour suppressor genes that are silenced in breast cells in the lead-up to developing cancer. “These genes present a potential new target for anti-cancer treatments that are based on re-activating gene activity” says Professor Roger Reddel, Head of the Cancer Research Unit. Professor Reddel stresses that “more research is needed to fully understand the consequences of ‘gene silencing’ before attempts are made to re-activate these genes.”

Top scientist wears jeans with pride

Continued from page 1

“It is indeed a great honour that my contribution to the world’s knowledge in Embryology is recognised by peers both within and outside my field,” says Professor Tam. “I would like to stress that the achievement is not mine alone. I am eternally grateful to present and past members of my team for their dedication and effort, and to the CMRI for the support of my research.”

CMRI Director Professor Roger Reddel said that “Professor Patrick Tam is an exceptionally generous colleague who gives his time and expertise to help other scientists here, and in many top research centres throughout the world. The CMRI is tremendously proud of Patrick and his research team, and all they have achieved.”

Other well known fellows include Peter Doherty, Ian Frazer and Fiona Stanley.

Jeans for Genes®

Take part in a Mass Denimstration Jeans for Genes Day Friday August 1, 2008

Wear your jeans on Jeans for Genes Day Friday August 1 and take part in a Mass Denimstration. Your support will help our scientists continue their work in trying to find cures for diseases. We aim to raise \$4.5 million this year. So buy a badge or give a donation. Become a Genie Denimstrator at your school, workplace, or in the community. You can help us promote the event, collect donations, organise fun activities such as Jamm for Genes, or sell Jeans for Genes merchandise and Groovy Gear (as shown).

Shannen's Genie Story

At 15 years old, Shannen in Year 10, loves art, enjoys swimming and up-tempo jazz dancing. But there are two things that make Shannen Miller pretty extraordinary.

She is determined to raise as much money as she can for Jeans for Genes and she has chronic granulomatosis, a disease that affects one in 4 million people.



"It's pretty rare. Part of my immune system doesn't function properly so I am affected by bacterial and fungal infections. I have regular antibiotic injections and I had to have my liver drained – it was painful and some complications meant I had to miss the whole first term of school this year" she said.

Shannen supports Jeans for Genes because she knows the Children's Medical Research Institute is worth every dollar she raises – to help children in the future be healthier.

15 year old genie Shannen Miller has an extra reason to wear her jeans on August 1

Denim Gold Charity Dinner

Join us on July 23 at the Hilton Hotel for the Jeans for Genes **Denim Gold Charity Dinner**, which this year also celebrates the 50th anniversary of the Children's Medical Research Institute and is once again proudly sponsored by Toyota Financial Services. The major highlight of this event is the auction of celebrity signed jeans artworks, donated by the celebrities to raise funds for research into children's genetic diseases. For more information please contact Christine McGee 02 9687 2800.

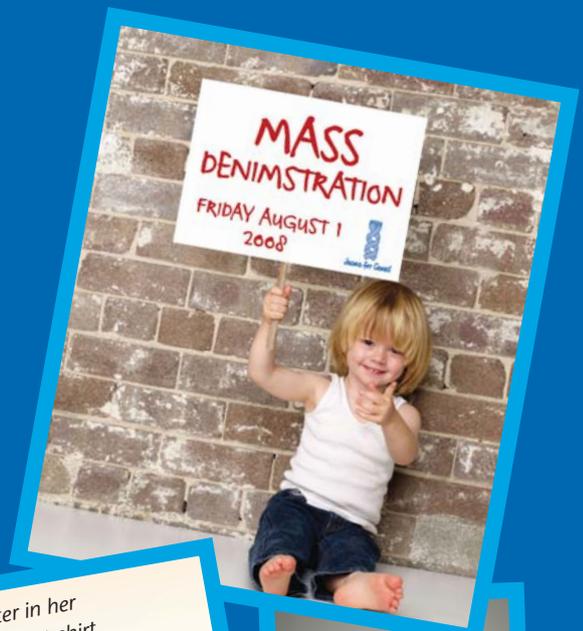
David Duchovny by Ester Erlich, one of the artworks up for auction at the Denim Gold Charity Dinner



Jeans for Genes Golf Day

The Vaucluse committee is hosting a Jeans for Genes Golf Day at Concord Golf Course on Thursday July 31. For further details please contact Christine McGee on cmcgee@jeansforgenes.org.au or 02 9687 2800.

Jeans for Genes is a major fundraiser of the Children's Medical Research Institute



Ricki-Lee Coulter in her "Groovy" designer t-shirt



Twins Charlie and Beau Hardy getting ready to Jamm for Genes

Larry Emdur and Jacqueline Facaris ready to take part in the MASS DENIMSTRATION



\$3 Denimstrator Wristband



\$5 Gold Helix Badge



\$4 Denimstrator Dog Tag

Special Edition Grant Hackett Badge





Clockwise from far left:

Professor Patrick Tam, Dr Ian Alexander, Ms Julie Owens MP and Mr Stephen McKew at the launch of the 50th anniversary exhibition;

Lauren Murphy and David Garth, winners of the Bill Waugh Memorial Trophy at the Vaucluse Committee Tennis Day;

Rhonda Bailey, Jenny Bolden, Marg Weir, Greg Gilmore, Dorothy Hanbridge, Kate Quinn, Kelli Campbell of the Gerringong Committee;

Libby Thomas, Prue Kellaway, Robyn Dezarnaulds, Helen Hill and Helen Dawkins, nurses from some of the first CMRF fundraising telethons at the Racquet Committee Card Day, with CMRI Science Communication Officer Ruth Gordon at the back;

Brett McFall presenting a cheque to CMRI's Jennifer Philps.

Committee Power

'50 Years of Discovery' CMRI's 50th anniversary exhibition was launched at the National Museum of Australia in Canberra on the evening of Tuesday 11 March. Over 100 guests attended the launch, which was opened by the Hon. Julie Owens, Federal member for Parramatta. ABC Radio producer Adam Shirley was MC.

COMMITTEES

The **Vaucluse Committee's** theatre excursion to see 'Billy Elliot' was a sell out and everyone enjoyed the show. There was beautiful weather at the Tennis Day in the grounds of Fairwater. Congratulations to the winners Lauren Murphy (an outstanding tennis player at only fifteen years of age) and David Garth.

Thumbelina Committee's Hat and Fashion Parade was a delightful way to spend a Sunday afternoon with couture hats for every occasion and gorgeous outfits by the Bellissima Collection.

Gerringong Committee took part in the ANZ Bank Trivia Night. Although not the winning table, the committee finished on top with a \$2,909.70 cheque for the CMRI.

Racquet Committee Card Day was a grand slam and raised \$8,000. Several nurses from early CMRF telethons played a hand in ensuring the event was a success.

OTHER SUPPORTERS

The Honda Foundation donated a PCR machine to the Gene Therapy Research Unit (GTRU). The machine is used to make large quantities of DNA for analysis of genetic mutations. Dr Ian Alexander, Head of the GTRU says "This PCR machine is fundamental to the majority of experiments that we do in the laboratory. It will greatly enhance the progress of our research."

Corporate social responsibility and generous community support came to the fore when a generous cheque of \$3,500 was donated to CMRI as the well known entrepreneur and author Brett Mc Fall presented his seminar to an enthralled audience "How to make money while you sleep."

Kath Furney is running in the Gold Coast half marathon in July to raise money for the CMRI. Kath draws inspiration from her beautiful daughter Ella and the amazing children she has met in hospitals in Brisbane. Visit www.everydayhero.com.au/run4research (password gcmarathon) to make a donation.



Dates for your Diary

Saturday 31 May "Magic at the Glen"
Glen Street Theatre, Belrose is your chance to see a great magic show. Matinee and evening show – contact John Seckold 0419 274 587.

Friday 13 June Strathfield Committee is celebrating CMRI's 50th anniversary with a Golden Celebration Dinner at 'La Mirage' restaurant, Five Dock. Contact Joyce Thiele 02 9363 3622.

Wednesday 23 July Jeans for Genes Denim Gold Charity Dinner at the Hilton Hotel. Contact Chris McGee on 02 9687 2800 or cmcgee@jeansforgenes.org.au

Thursday 31 July The Jeans for Genes Golf Day will tee off at Concord Golf Course. To reserve a place contact Chris McGee on 02 9687 2800 or cmcgee@jeansforgenes.org.au

Monday 21 July – 16 August Display and sale of original photographic artworks by CMRI scientists and an exhibition in celebration of CMRI's 50th anniversary. The Arthouse Hotel, 275 Pitt St, Sydney; entry is free. Supported by the Arthouse Hotel, the Art Scene and Sun Studios Australia.

Tuesday 12 August Northern Beaches Committee are holding a Card and Fun day with many card and board games to choose from. Contact Maureen Botha 0402 021 739.

Friday 29 August An extraordinary 50th anniversary AGM of Committees is to be held at Parliament House, Sydney. Please contact Jennifer Philps on 02 9687 2800 to reserve a place.