

under the microscope

2 Embryology expertise

3 Caught on camera

4 Get in on the Act

5 Brains in Berlin

You did it!

Over the last ten years communities around Australia have supported medical research by swapping their uniforms, suits and skirts for their comfy, worn-in denims. Their amazing efforts have made the 10th Jeans for Genes Day the most successful ever by raising the whopping total of \$4 million!

"The support we receive is overwhelming," said Julijana Trifunovic, National Campaign Manager for Jeans for Genes Day, "and thanks must go to all the schools, businesses and individuals who volunteered their time to raise funds for research into understanding genetic childhood diseases."

The money raised by Jeans for Genes Day is invested, where possible, in a capital fund. This will allow the Children's Medical Research Institute (CMRI) to conduct important basic medical research for many years to come. Basic research focuses on deciphering exactly how our DNA, genes and tissues work, and understanding the basics is vital to progress medical treatment for disease.

Australians have shown that they believe in the work of CMRI and the past decade has seen some significant discoveries in the quest to understand the origins of the diseases that affect children.

"Even just in the past year we have seen huge progress in understanding brain communication; discovering more about cancer's uncontrollable growth; and detecting a key component in muscle development," said Erin Stalenberg, Scientific Education Coordinator, CMRI.



A scientist in the making? Jean-clad Julian Siavash Brumpton Ghodusi with a big genetic puzzle gets into the spirit of Jeans for Genes Day. Photo courtesy Kahuna Digital.

Over the years, the community has helped in many different ways and in 2003 some fantastic events took place all around the country. The Jeans for Genes Dinner Auction was enormously successful raising over \$320,000 aided by \$26,000 from Ian Thorpe's jeans, a record-breaking achievement. Our brilliant retailers brought in over \$620,000, a huge increase on previous years and of course the many excellent individual Genies and CMRI Committees raised a colossal \$3.1 million throughout the year.

Planning has already begun for this year's Jeans for Genes Day, Friday, August 6 2004, with the theme Music LEGends; which plans to be even more successful than 2003.



Director's desk



The Importance of sharing research findings

One of the major problems in modern biomedical research is the exponential increase in research information available on international databases. Even if one has selected a very small particular area of biology as a central theme of a research program, there is no way one person alone can hope to explore in any reasonable time frame, many of the specific ramifications of significant observations that may have been made. Database scanning inevitably points to a series of derivative experiments.

To achieve this you have to rely on reputable collaborators who can bring their particular skills to bear on a research question. This can only be achieved by face-to-face communication with colleagues in the field – you need to establish a personal rapport so that all parties trust one another and are satisfied that the mutual interactions will be beneficial to all concerned. It is for this reason that the Institute staff need to travel and discuss their work with others on the international scene. Australia has a relatively small research community and accordingly many of our research partners are based overseas.

The benefits of these shared research interests are highlighted by the results achieved from the highly successful collaboration between Dr Phil Robinson's group and the research unit directed by Dr Michael Cousin at the University of Edinburgh. Many similar international collaborations are in place elsewhere in the CMRI. In recent times the five year collaboration between Patrick Tam's Embryology Unit and research groups in the U.S.A., France and Japan was supported by the Human Frontiers Programme and was hailed by that organisation as an outstanding success, and as an example of what can be achieved by imaginative international cooperation.

This level of collaboration is testament to the high calibre research and professional expertise that CMRI contributes to the international scientific community.

Professor Peter Rowe



Dr David Lobel from the Embryology Unit whose expertise is highly valued

Expertise in Embryology and Engineering

The CMRI's talented Kimberly-Clark Research Fellow Dr David Lobel was recently invited to showcase the Embryology Unit's work at the Tissue Engineering Society International conference in Disneyworld, Florida, USA.

At the conference world-class tissue engineering scientists came together to share their cutting edge research strategies and innovative techniques for repairing damaged body parts. Tissue engineers use cells grown in the laboratory including stem cells, immature cells with significant development potential, and a variety of scaffolding materials to construct specific three-dimensional body structures such as bone, liver and muscle. Much of the current research is focused on perfecting the environment that these immature cells need in order to grow into the right type of specialised cells and form tissues.

Dr Loebel's expertise on cell and tissue development in mouse embryos proved invaluable. "Understanding what occurs under normal circumstances in the developing embryo is essential for the ability to successfully manipulate cells and refine tissue engineering techniques," Dr Loebel said. Conference attendees expressed great interest in Dr Loebel's work and will be following the embryological research at CMRI to help keep them informed and on track.

Dr Loebel also expressed the value of attending the conference for CMRI, "It was particularly inspiring to see and hear the many practical applications in biomedicine of what the Embryology Unit is working on at a basic level in tissue development."

Brain speak: Scotland to CMRI

How do brain cells communicate with each other? Scientists around the world have been trying to figure that out for decades. Dr Andrew McGeachie of the Cell Signalling unit recently travelled to Scotland in pursuit of finding out more.

Working for three weeks with one of CMRI's past talents, Dr Michael Cousin, at the University of Edinburgh, Dr McGeachie learnt exciting techniques to study how our brains cells talk to each other. The expertise that Dr McGeachie brought back from Scotland will be used to establish similar state-of-the-art technology here at CMRI.

The cells or neurons in our brain communicate using chemical messengers, called neurotransmitters. When a message travels through our brain, neurotransmitters are released from our brain cells in tiny packages called vesicles. The vesicles deliver the neurotransmitter across a small gap to the next neuron and are then retrieved back into the original cell to be recycled. This process of vesicle retrieval is called endocytosis.

The live cell imaging experiments Dr McGeachie completed in Edinburgh involved staining living neurons, kept alive in a laboratory dish, with a fluorescent dye. This enables scientists to clearly see and track the neurons' activity during the communication process. "We can see when the vesicles leave the neuron, and when they are recycled during endocytosis," said Dr McGeachie.

Endocytosis is a crucial step in cell-to-cell communication. If the vesicles are not retrieved and refilled with neurotransmitter, brain communication would fizzle out and eventually stop altogether. Some research has linked a breakdown in endocytosis to diseases such as schizophrenia, depression and epilepsy. Dr McGeachie will be focussing his research on the protein dynamin, which is responsible for pinching off vesicles when they are retrieved into the cell. He will be testing a series of drugs to prevent endocytosis that could possibly be used to treat disease in the future.

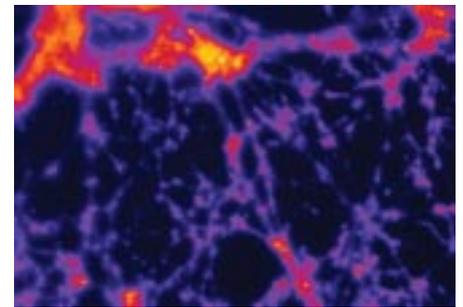
"The applications of this research are for conditions such as epilepsy, where brain cells release too much neurotransmitter. If we block endocytosis, vesicles cannot be refilled and re-released; seizures may be prevented."

*Dr Phil Robinson,
Head of the Cell Signalling Unit*

Boosting CMRI's expertise in live cell imaging is PhD student Victor Anggono, also from the Cell Signalling Unit, who will be off to Scotland soon. Victor has been awarded an Australian Bicentennial Scholarship through the Menzies Centre for Australian Studies from Kings College, University of London. The prestigious scholarships are awarded to talented Australian postgraduate students to work in the UK for three months.

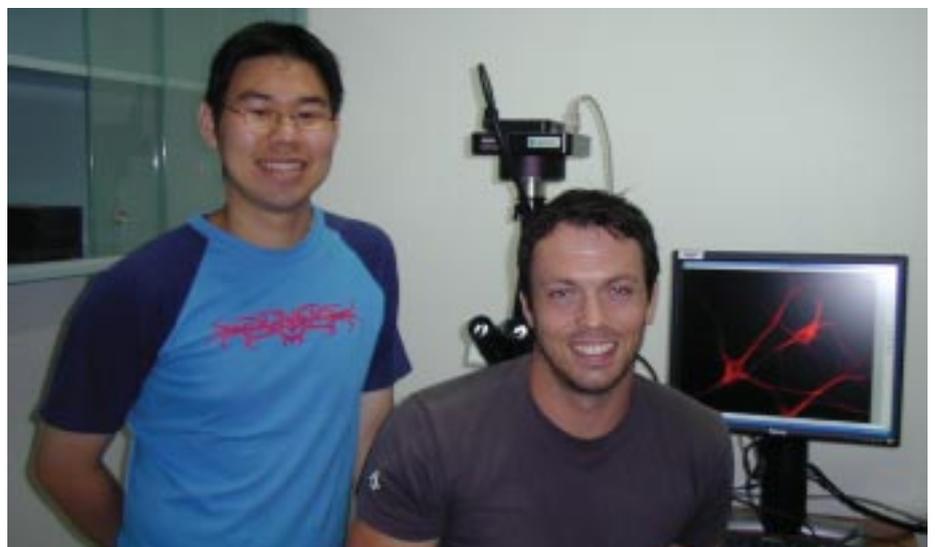
Victor will be testing modified versions of dynamin that he has created. Victor has been able to block endocytosis in non-neuronal cells by changing the structure of dynamin. His time in Edinburgh will be spent testing these modifications on live brain cells with the advantage of catching it all on camera.

Dr Robinson, Head of the Cell Signalling Unit says, "The strong ties we have with Dr Cousin's lab in Edinburgh, the expertise Andrew has and that Victor will gain, has fast-tracked our ability to use this technology. The equipment will arrive in a matter of months and we will hit the ground running, fully prepared to start our investigations; it's very exciting."



Live cell imaging photographs show neurons that have been stained red to identify when endocytosis occurs during brain communication. (Photo courtesy Andrew McGeachie)

Seen in the 'O' on the front cover are brain cells that have been stained for activity and tracked using live cell imaging. (Green indicates the dynamin protein and shows endocytosis; red identifies cells as neuronal). (Photo courtesy Victor Anggono)



PhD student Victor Anggono and Dr Andrew McGeachie of the Cell Signalling Unit.

Jeans for Genes®

Who's in on the act this year?

This year's campaign has a Music LEGends theme, hence the catchphrase "Get in on the Act." All of the jeans donated this year to be auctioned at the Art Auction on Thursday, July 22 2004 are from Music LEGends around the world. Celebrities supporting this year's auction include Mick Jagger, David Helfgott, Tom Jones, Barry Manilow, Dame Shirley Bassey, Dolly Parton, Dame Kiri Takanawa, and great Australian artists including Powderfinger, Vanessa Amorosi and Kamahl just to name a few. Also in on the act is Delta Goodrem who has kindly donated a pair of her personally signed jeans. The jeans, painted on by artist Garry Fleming will be reproduced and sold as our special edition \$10 pin this year. Garry met Delta at her home and talked about what sort of artwork she might like painted on her jeans. Delta played a song for him, mentioned that she loved butterflies and together they played with her dog. What a result! As you can see, the jeans are absolutely beautiful.

Community spirit on a high with new and old retailers on board this year

It's fantastic to announce that this year we have some brand new official retail outlets on board to help us raise funds for the Children's Medical Research Institute. We are thrilled to see so many new groups involved. They include Spendless Shoes, Rebel Sports, Banjo's Bakery, Franklins Supermarkets and Austar.

Jeans for Genes is also excited about the continued support from Bayswiss, Best and Less, Big W, General Pants, Gloria Jeans Coffee, Harvey Norman, Domayne, HCF, Jeans West, Just Jeans, Levi's, Lowes, Pharmacy Guild of Australia, Polo Ralph Lauren, Terry White Chemists, The Warehouse, Toys R Us, Westpac, Challenge Bank and the Bank of Melbourne.



This artwork was created by Garry Fleming on the jeans of Delta Goodrem, for the 2004 Jeans for Genes Art Auction. Last year Delta won an astounding seven ARIA awards, including Best Female Performer and Single of the year. Her debut album "Innocent Eyes" has sold over a million copies worldwide



\$10 - Delta Goodrem's jeans
(special edition)



\$5 - Hot helix jeans



\$3 - Heavy metal pins



You can buy badges from our wonderful network of retail supporters and jeans outlets

We dream of Genies

One of our main goals this year is to increase the number of Genies throughout Australia. So if you know someone who might like to get in on the act and help out please let us know. Our target this year is \$4.5 million. So we will need all the help we can get. We not only need people to raise funds in their workplace and business but also to assist at the train stations, malls and shopping centres throughout Australia. If you would like to volunteer your time on Friday, August 6 2004 and sell Jeans for Genes pins, please contact Kelly Morgan (Campaign Assistant for Jeans for Genes) on (02) 96873800.



The Warehouse staff got in on the act last year and will be on board again this year

GET IN ON THE ACT.



Clockwise from far left:

Killara Inn Manager, Matthew Clark, presents a Jeans for Genes cheque to Lisa Melton of CMRI (Photo courtesy of Gailsusan Clark, Sydney Observer);

Robyn Chadwick, Jeanne Luck and Zandra Jurach of the Northern Beaches Committee with their prize-winning stall;

Meredith Nicol, President of the Canberra Committee with Elizabeth Rylie on the verandah of Micalago Station (Photo courtesy of Canberra Times);

Mrs Lindsay Neil has knitted dozens of gorgeous jumpers and matching hats for our committee luncheons, seated here with Elly Case and Vicki McMullen from our Canberra Committee.

Committee Power

Killara Inn

Instead of a corporate gift, staff of the Killara Inn invited regular customers to celebrate with a Christmas cocktail party. Lisa Melton of CMRI was on hand to thank staff and guests for their contributions to the Inn's Jeans for Genes fundraising efforts earlier in the year.

Congratulations

Congratulations must go out to Margaret Weir (Gerringong Committee) and Prue Kellaway (Racquet Committee) on receiving their OAM awards on Australia Day. It is wonderful to have such committed and passionate supporters on board with CMRI.

Northern Beaches Committee

Congratulations to the Northern Beaches Committee for their eye-catching and astounding Christmas Card stall, which won third prize for best decorated stall at the Warringah Mall Charity Day.

Canberra Committee

The annual luncheon was a brilliant success, as always, with over 520 guests enjoying the wonderful gardens of Micalago Station near Canberra. Micalago has been the setting for films such as 'My Brilliant Career'. Many thanks to the Rylie family for their generosity in opening up their home in such difficult drought stricken times.



Dates for your Diary

Thumbelina Committee Charity Race Day

Forty years young and still up and running! The Thumbelina Committee will be at the starting gate to celebrate the beginning of their ruby year with a Charity Race Day on a day to be announced. Lunch and afternoon tea available in the special 'race goes package'. It's going to be a day of fashion, food and fun; join us to help make this a record-breaking year for Thumbelina. Saddle-up a table of 10 or join others. For more information call Ossie or Lesley Pitts 02 9417 1160

Becroft Committee Luncheon

St Patrick's Day Luncheon, Arcadia. Quilts for sale and a talk on antique quilts by well-known quilter Jenny Burton, 17 March, 12pm

Strathfield Committee

Dinner with special guest speaker, renowned international journalist Jonathon Harley (son of Dr John Harley, former director of CMRI), Concord Golf Club, 26 March, 7pm. Tickets \$75

Doll's house at the Rocks

The doll's house 'Misrule' generously donated to the CMRI by Philippa Poole is on exhibition at 'Clyde Bank', a restored mansion and gallery in Old Sydney. The doll's house commemorates 100 years of the book *Seven Little Australians*. See the exhibition at 43 Lower Fort Street, The Rocks, Sydney

Hills Committee Mother's Day Luncheon

Mother's Day Luncheon at the Sydney Convention Centre's Harbourside room. An exciting guest speaker accompanies MC John Mangos. For bookings contact Patti Payne 0418 867 784

Mudgee Committee Autumn Feast

Enjoy fabulous food, wines, raffles and music by The Jury. New Rural Education Pavilion, Mudgee Small Farm Field Days, 13 March 2004

Gosford Committee

East Gosford Lions club and Gosford Committee will be holding a trivia night at the Gosford Golf Club 27 March, 7.30pm. Contact Alison 4325 0076



Racquet Committee Annual Card Day

Join us for a wonderful day at St Ives Bowling Club, 29 March

Allan Research Trust

Don't forget your dancing shoes! Dinner dance/auction at The Baguette Room, Rosehill Gardens 28 May with Rob Neil as MC and fantastic music, contact Janys 9874 1607 (note the change of date and venue)