When Jim Aylward was a young medical researcher in the USA, his mother sent him a small clipping from a local Melbourne newspaper which reported that a common weed could treat skin cancer. The weed was called radium weed or “petty spurge” and it grew profusely in temperate gardens throughout the world, including Australia. Jim promised himself that when the right moment arose he would determine if there was any credence to the story, and if so, find the active compound responsible for the activity. That moment came over 20 years later.

The first step was Jim meeting with Professor Peter Parsons at the Queensland Institute of Medical Research (QIMR). After an exciting first result against cancer cells in culture - “a Eureka moment” - Jim began to isolate the active principle from the weed and engaged QIMR to determine the extent of its activity and how it worked at the molecular level. Forming a company he called Peplin, he began the journey of turning a weed extract into a pharmaceutical that could help the hundreds of thousands of people who have the pre-cancerous condition called solar keratosis – or sun spots. Based on the early research at QIMR, they developed a topical gel – PEP005 – and tests on 255 patients showed a 67% reduction in the number of sunspots following only a few applications. Sunspots were totally cleared on about 27% of patients. The gel had no major side effects.

Currently, removal of sun spots can be a long and painful process but if left untreated some can progress to skin cancers that become life threatening and require radical and often disfiguring surgery.

Professor Peter Parsons, Laboratory Head of the Drug Discovery Group at QIMR, said “when Jim first approached us we were very skeptical and I told him don’t call us we’ll call you…. and we did call him – very quickly!”

Jim said, “I am very grateful to the scientists at QIMR, in particular Professors Peter Parsons and Andreas Suhrbier and Drs Jonathan Ramsay and Sarah-Jane Cozzi.”
From the Director
Professor Michael Good AO

“We are delivering exceptional returns on your investment in QIMR”

Firstly, I would like to sincerely thank all those who kindly supported our recent fundraising appeal. We are very grateful for the donations we receive as we rely heavily on the community’s generosity to drive innovative new projects, foster students and early-career scientists as well as to help propel discoveries from the laboratory into clinical practice.

I can confidently say that we are delivering exceptional returns on your investment in QIMR. We welcome the opportunity to show you where your donations are being applied and invite you to take part in one of the regular free tours of QIMR that we provide for our donors and anyone in the community who is interested in our work. Please call us on 1800 993 000 to make a booking.

A number of our scientists were recognised at the recent Queensland Premier’s Award for Health and Medical Research, reflecting the calibre of the research undertaken at QIMR. The awards are a celebration of the success of scientists in the early stages of their careers.

Dr Stuart Macgregor, from our division of Genetics & Population Health, received the 2009 Premier’s Senior Researcher Award for his research into the genetic basis of melanoma – the most deadly form of skin cancer. Dr Macgregor and his team examined over half a million genetic changes and identified a genetic variant that doubles melanoma risk. The variant is present in 1 in every 6 Queenslanders. Despite decades of research, metastatic melanoma remains an incurable disease. However the 5-year survival rate is dramatically higher for patients diagnosed in the early rather than late stages of the disease. Understanding the genetic factors influencing the development of melanoma is crucial to the identification of at-risk individuals and could greatly increase early-detection of the disease.

I would like to personally congratulate Dr Macgregor for winning this prestigious award and for his dedicated work at QIMR.

I am also very pleased to announce that construction will start soon on our new building – a state of the art 13 floor research facility. This building is only possible thanks to the generous support of the Queensland and Federal governments and The Atlantic Philanthropies (AP). The $27.5 million Founding Chairman’s grant from AP is our largest-ever philanthropic gift and brings the foundation’s total commitment to QIMR over the last 10 years to $57 million. Mr Chuck Feeney, the Founding Chairman of AP, has been involved in the conceptualisation and planning of the new building for some time and played an active role in encouraging the financial support from both the Federal and State governments.

QIMR continues to grow at a rapid rate and to make its mark on the world stage. We are currently the largest medical research institute in Australia and with the enhanced capacity that this new building will provide, we will continue to be a major influence internationally in the fields of cancer research, infectious diseases, genetics and major illness prevention. This will translate into improved health for all Australians which is the sole reason we exist. Thank you for the part you play in our success.

(left to right) Qld Premier The Honourable Ms Anna Bligh, Mrs Helga Feeney, Mr Chuck Feeney, Professor Michael Good AO and Mr Clive Berghofer AM at the announcement of Atlantic Philanthropies history making support of QIMR.
Major advance in a vaccine for Rheumatic Fever

All of these people have had some form of Group A Streptococcal disease. Thomas Edison lost part of his hearing due to scarlet fever, Helen Keller's blindness and deafness is thought to have been caused by scarlet fever, Jim Henson (creator of the Muppets) died from invasive disease which started as a strep throat, and Kevin Rudd had rheumatic fever as a child which led to his heart valve being replaced when he was 36 years old.

Researchers at QIMR have been conducting dedicated research into Group A streptococcal (GAS) disease for over 20 years. GAS is a bacterial infection responsible for a wide range of conditions that, combined, are the seventh leading cause of death in the world. Group A streptococcus is the bacteria responsible for the common strep throat through to toxic shock syndrome and the deadly flesh-eating disease Nectrotizing fasciitis.

Professor Michael Good, QIMR Director and Head of the Molecular Immunology Laboratory and Dr Michael Batzloff, head of QIMR's Bacterial Vaccines Laboratory, have proudly announced that a human trial prevent illnesses including rheumatic fever – a major breakthrough for the Institute and one that could save the lives of 400,000 children worldwide each year.

They said pre-clinical work had shown that animals given the vaccine reacted by generating antibodies against streptococcus infection. When those antibodies were isolated from their blood and tested on other animals that had not been given the vaccine, those other animals were protected against the bacteria.

Further, the vaccine appeared to protect the animals for long periods by priming immune system "memory cells" to react against streptococcus after a long period. It also seemed to be effective against multiple streptococcus group A strains, including those circulating in Thailand and Fiji, raising hopes it could prove effective worldwide.

"There are many steps required to develop a vaccine, but this is one of the bigger ones - to have defined the mechanism of how the vaccine works, and to show that we can generate long-lived immunity through memory B cells," Dr Batzloff said.

The human trials will initially involve a small number of healthy adults to check the vaccine is safe to inject into people. Later it will be tested on larger numbers, including people in remote Aboriginal communities who have the largest incidence of rheumatic fever in the world, to test its ability to prevent cases of rheumatic fever and heart disease.

Congratulations to all the QIMR scientists who have worked on this groundbreaking project.

In the Access Economics report in June 2008, it was determined that a GAS vaccine could provide health benefits valued at $319.7 million per year, of which $78.4 million would be realised by indigenous Australians.
We salute some Special friends

A very special thank you to the Champers Ball Committee who worked tirelessly to ensure the success of this year’s Champers Ball. Thanks to the efforts of MBF team members Karen Low (Chair), Sarah Smedley, Andrea Jacks, Christopher Thwaites, Kate Challenor, Tanya Bridgewood and Julie Bingham we raised over $30,000 for cancer research.

Cancer is one of the world’s biggest killers. By 2020 the World Health Organisation estimates that more than 15 million people will die annually - that’s 50% of all deaths worldwide. In Australia, breast cancer is the leading cause of cancer-related deaths in women. Unfortunately cancer is a disease that can strike anyone at any time.

Derek’s Story:
The funds raised at the Champers’s Ball will be directed to Dr Derek Richard’s breast cancer research. Guests at the Ball were enthralled by Derek’s amazing story of how he became a cancer researcher.

“My original research involved the study of an ancient organism which lives in boiling sulphuric acid pools in Iceland (at the time I was working at St Andrews University, Scotland). This organism - an archaea - survives in the most extreme environment on earth; to do so it uses a super DNA repair protein to protect its genes from its severe external environment. The “super protein” not only protects the archaea’s DNA but it is also the key to repairing damaged DNA. Human cancer is caused when specific genes are damaged and not repaired properly, this can result in genes being lost or having their function change. When this occurs in certain genes then a cell can lose its programming and start to divide uncontrollably. So what does life in volcanoes have to do with cancer?

We have found this super repair protein in humans!!! I have named this protein hSSB1. On discovery of this protein in humans, I decided to relocate my work to the best cancer centre in the world. I chose QIMR as it offered the best of everything I needed - the core cancer experts, resources, clinical links and an enthusiastic research environment. All these things contributed to my decision to relocate to Brisbane. Since then this research has developed and has shown that hSSB1 is the central protein required to protect humans from cancer causing DNA damage. Without hSSB1 cells cannot repair their genes when they are damaged (an average cell’s DNA is damaged 30,000 times every day!!!).”
Club Clipsal International Charity Luncheon

Thank you to our very good friends at Clipsal Living Electrical who once again organised a corporate lunch for their Club Clipsal customers. This very successful event was held at the GABBA to raise funds for QIMR and the Zig Zag Foundation.

Left to right: Gary Belcher (MC), Gary Milne (General Manager Qld Clipsal Australia) and Mal Meninga (guest speaker) at the Club Clipsal luncheon.

The Tuesday Embroiderers

We received this lovely letter from some wonderful supporters:

We are a small group of friends who meet each Tuesday in each other’s homes. Originally embroiderers but now knitters, crocheters, or (as we are now getting older) quite often just talkers and listeners. For most of us, it is the best day of the week. We each put in 50 cents and we are amazed at how this money grows. We forward it to QIMR when it reaches $50 and in the last 8 years we have donated $1,450.00! I would suggest to other groups of friends that they follow our example. The group has been meeting for about 30 years and our friends of course are not the same ones as before. We have all been on a tour of QIMR and most of us have been personally touched by cancer within our own family and friends.

Vale Brian Vogler

Former Socceroo Brian Vogler was born in Ipswich on 30 May 1932. He began his sporting career as a rugby league player before switching to football (soccer). Brian played senior football in Queensland for Blackstone and Hellenic during the 1950s and 1960s. An incredibly talented sportsman he later became a competitive cricketer and lawn bowler. Brian was Socceroo number 158. We extend our sincere condolences to his family and thank them for their kindness in requesting donations to the Queensland Medical Research Institute in lieu of flowers at Brian’s funeral.

If you would like information on in memoriam donations please call us 1800 993 000.

Recently at QIMR...

QIMR recently hosted hundreds of high school students as part of our free lecture series. Our aim is to champion medical research as a career, provide work experience at several critical stages of this pathway and educate and mentor bright students and teachers from Queensland, interstate and overseas.
QIMR is committed to raising community awareness of medical research and inspiring tomorrow’s scientists. As part of this commitment, we will be operating a stand in the National Science Week Pavilion at the Royal Queensland Show. The theme this year is "Ignite your imagination".

We invite all our supporters to come along and say hello to our scientists who will be in our “laboratory” supervising hands-on experiments. The dates are Thursday 6th August to Saturday 15th August inclusive. The National Science Week Pavilion is located on the corner of Industrial Street and Primary Street in the RNA showgrounds and is open from 9am to 6pm every day of the EKKA.

Biniris Supports PhD Scholar

Biniris, a multi-award winning cleaning and ancillary services provider recently announced that they would support a PhD scholarship at QIMR. The scholarship, established by the Griffith Medical Research College (GMRC) was awarded to Maggy Sikulu (pictured right).

The GMRC is a joint venture between Griffith University and QIMR and aims to promote world class medical research collaboration between scientists from these organisations. In addition to providing seed funding for new collaborative projects, an important role of the GMRC is to facilitate training and mentoring the next generation of medical research scientists. Director of the GMRC, Professor Michael Good, is delighted and said; “as scientists, one of our most rewarding roles is to mentor young researchers and to see them grow and develop into medical research leaders of the future. Without supporters like Biniris some very talented young researchers would not have the opportunity to pursue their dreams.”
Moles have always been associated with melanoma risk but now scientists have genetic proof. Researchers from QIMR have found two new genes that together (through increasing the number of moles) double a person’s risk of developing melanoma.

As part of an international study, the team at QIMR, led by Professors Nick Hayward and Grant Montgomery, studied the genes of almost 6,000 people together with their mole count. Specific changes in two genes were found to make people more susceptible to developing moles. The researchers went on to show, in another 4,000 people, the same two genes increased the risk of developing melanoma – the most deadly form of skin cancer.

“These are the first genes found to increase melanoma risk by influencing the number of moles a person has,” explained Professor Hayward. “This finding improves our understanding of the genetics of melanoma and therefore the molecular pathways that lead to its development.”

“It has long been known that having a large number of moles is the biggest risk factor. Therefore we predicted we would find genes linking moles and melanoma. We now have conclusive genetic evidence that having a large number of moles increases an individual’s risk of developing melanoma.”

The study found that people who carry one of these two gene variants have a 25% increased chance of developing melanoma, while for individuals carrying both variants their risk is doubled.

“In the long term, this research will be useful in developing screening techniques, and will also allow us to identify potential new drug targets and ultimately develop new therapies to treat melanoma,” said Professor Hayward.

Moles are normal but people should seek advice from their doctor if they observe any changes in size, colour or shape. People with lots of moles are at a higher risk of developing melanoma and should therefore take extra care to avoid overexposure to ultraviolet radiation. So make sure to remember the slip slop slap message – slip on protective clothing, slop on 30+ sunscreen, slip on a hat and seek shade.

For more information on our melanoma research please visit our website www.qimr.edu.au or our research partner www.suncorpsunwise.com.au.
The fabulous Fitton Insurance Charity Race Day is on again! The theme this year is “Mamma Mia”. We highly recommend this as a wonderful opportunity to visit beautiful Toowoomba and help QIMR at the same time. Why not treat yourselves to a mini holiday and spend the weekend – the Carnival of Flowers is on at the same time. Come in your best Mamma Mia outfit. There is a great prize for the best dressed. A bus will be leaving from QIMR – if you would like to join us please phone 1800 993 000.

For more information on the race day please call Fitton Insurance Brokers (07) 4630 1379.

The lucky winner of the Diseases and Disorders crossword in the last edition of LifeLab was Frank Hepple of Toowoomba. Frank won a beautiful David Hart print “The Melissa Fleur”.

Thank you to everyone who entered.

The answers were:

1. Mumps
2. Parkinsons
3. Dropsy
4. Tuberculosis
5. Dementia
6. Haemorrhoids
7. Gout
8. Strabismus
9. Jaundice
10. Dengue fever
11. Bipolar
12. Leukaemia
13. Flu
14. Streptococcus
15. Tennis elbow
16. Emphysema
17. Glandular
18. Rickets
19. Impetigo
20. Anthrax
21. Vertigo
22. Tetanus
23. Phantom limb
24. Straphylococcus