



GARVAN 50TH ANNIVERSARY

Feature story: *The Garvan Journey* (1963 - 2013)

Today, the Garvan Institute of Medical Research is recognised as one of Australia’s premier medical research institutes; however, its beginnings as a St Vincent’s Hospital clinical research unit were far more humble.

In 1963, when Garvan first opened its doors, only three endocrinology researchers occupied two ground-floor laboratories.

Nowadays, the 650-strong team working within the Garvan and The Kinghorn Cancer Centre (TKCC) are recognised as world leaders in the fight against the major diseases of our time - cancer, diabetes, obesity, osteoporosis, neurological diseases, and immune disorders.

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CELEBRATING

50
YEARS
1963-2013

Garvan Major Breakthrough Timeline

1973 Developed life-saving insulin infusion technique to treat ketoacidosis - a complication of diabetes

1983-86 Discovered the potential beneficial effects of fish oil in the diet and demonstrated effects of some foods on behaviour

1986 Produced Australia's first genetically engineered human therapeutic growth hormone

Opinion

This year we celebrate the 50th Anniversary of the Garvan Institute of Medical Research. The Institute was predicated on the vision and foresight of the Sisters of Charity, who recognised that their mission to heal the sick could not be fulfilled without research to prevent disease. It has been sustained by the faithful support of our governments and the extraordinary generosity of our community.

The ethos of the Garvan is embedded in this mission and its close historical and ongoing links with St Vincent's Hospital. Exploring the unknown requires gifted and dedicated individuals, as well as state-of-the-art experimental and analytical facilities, to create a critical mass of vibrant discovery. Bringing it to fruition requires research-informed clinicians to translate the insights obtained into the amelioration of disease. This is encapsulated in the mission of the Garvan to make significant contributions to medical research that will change the directions of science and medicine and have major impacts on human health.

Institutes like the Garvan are very special places that fulfill several important functions in the generation and transfer of knowledge for the community. They are places of discovery, where great minds gather and wrestle with ignorance. They are also part of a much greater endeavour, portals to an entire world of emerging insights, and the sites of early uptake of new concepts and medical technologies.

It has been led by outstanding individuals like Professors Les Lazarus and John Shine, supported and guided by Boards of extraordinary wisdom and capability. It has been the home of many outstanding scientists and clinicians, who have made enormous contributions to knowledge of human biology and disease, and the quality and effectiveness of medical treatment.

On behalf of all of my colleagues and those that have gone before, I extend sincere thanks to all who have supported and nurtured the Garvan over the past 50 years, and who continue to do so. We look forward to you being a part of our future progress.



Professor John Mattick AO FAA
Executive Director



Margaret Davis

Milestones in Our Lifetime

It is easy to take modern medicine for granted. We now have relatively easy access to ubiquitous drugs such as antibiotics and advanced therapies for cardiovascular disease, cancer and diabetes, just to name a few. It takes a person like Margaret Davis to remind us that these treatment options have only recently become available.

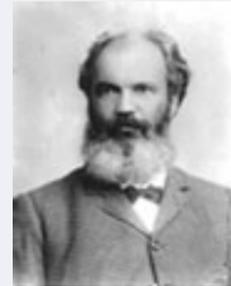
As a paediatric nurse in the 1940s, Margaret saw families experience the most unimaginable pain and suffering. "We would have to nurse sick children with meningitis for three weeks until the end." It is incredible that in just one (very full) lifetime, there have been multiple, significant breakthroughs in medical research and Margaret has experienced firsthand how these can change lives. "The discovery of penicillin and streptomycin were remarkable, and put an end to nursing sick children in their final days of tuberculosis, and death from, in today's terms relatively simple ailments such as a post orbital (behind the eye) abscess."

Margaret speaks passionately about medical research as it has impacted her working life, her own health and the health of her family and friends. "Taking it easy" is not a phrase in Margaret's vocabulary and she is fighting fit thanks to medical research.

She was treated for a potentially life threatening heart condition in 1992 and then osteoporosis from 1995. Margaret has personally benefited from cutting edge discoveries and therapies for these conditions that would not have existed without medical research. Without these treatments Margaret would not be able to enjoy life as she does today, and certainly would not be as competitive in the Australian Crossword Club.

Margaret would like to see an improvement in cancer incidence for our next generations but she would also like to see a shift in the way some of the more obscure diseases like dystrophies and degenerative neuromuscular diseases are prioritised. She is optimistic about the new medical research discoveries that are just around the corner.

Profile: James Patrick Garvan



James Patrick Garvan

James Patrick Garvan migrated from Ireland with his family at four years of age in 1847. He was educated in Sydney and became a distinguished NSW parliamentarian and insurance entrepreneur. Garvan married Mary Genevieve in 1871 with whom he had a large family of six sons and six daughters.

Garvan enjoyed various roles as a business leader and politician in his working life. In 1875 he read for the Bar with William Bede Dalley and Sir Edmund Barton who later referred to Garvan's "entirety of life, adorned with consistent principle, filled up in the discharge of virtuous duty, with nothing to conceal, no friendship broken, no confidence betrayed, no timid surrender to popular clamour, no eager reaches for popular favour".¹

He founded the Citizens Life Assurance Company Ltd in 1886, which later became MLC. A gifted sportsman, Garvan held the record throw of 121 yards one foot (111m) with a cricket ball. James Patrick Garvan died in 1896, survived by his wife and twelve children. He no doubt would have been proud of his daughter Helen's donation to facilitate the establishment of a medical research institute that has grown to become one of Australia's largest, with over six hundred scientists, students and professional support staff.

¹Bede Nairn, 'Garvan, James Patrick (1843-1896)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, <http://adb.anu.edu.au/biography/garvan-james-patrick-3598/text5579>, accessed 04 January 2013.

Researcher Profile: Professor Sue Clark



Professor Sue Clark

The most recent publication from Professor Sue Clark's group in the Cancer Research Program, promises to transform how people understand gene regulation in cancer. Professor Clark and her team study 'epigenetics' - which involves understanding the molecular machinery 'above' the genome. This includes how the DNA is packaged inside the nucleus, and how DNA becomes organised and modified and expressed. "We are unravelling the molecular puzzle of DNA packaging and gene control and how that goes wrong in cancer. We are mapping the epigenome of normal cells versus cancer cells and hope to use this information to translate into clinical benefits - being able to diagnose and treat cancer," explains Professor Clark.

Always interested in puzzles and the challenge of finding answers, Professor Clark initially studied botany, "I was intrigued by the variety of leaf and flower types. That led me into how genes were expressed that give rise to the variety of colours we see in flowers. Interestingly, this is all due to epigenetics."

"I then chose to move from my original field and specialised in the new field of genetic engineering. I did my PhD at Adelaide University where I made the first human cloned lambda library* which was very exciting, and that led into understanding how genes, in particular histone** genes, were organised."

Professor Clark has been at the Garvan since 2004. "Garvan appealed to me because it was important to work at a medical research institute, and because Garvan scientists studied not just cancer, but all major complex diseases. Also, there is a very good liaison between clinicians at St Vincent's, the Royal Prince Alfred Hospital, and clinical collaborations both in NSW and nationally."

"Garvan has also spent more than a decade building internationally leading tissue bio-banks, in particular for breast cancer and prostate cancer. So that gives us access to clinical samples which is critical to advance the epigenetic research that we do."

The newest finding from Clark's group involved building prostate cancer epigenome maps, "We have shown that large domains of the cancer genome are remodelled in the prostate cell due to changes in DNA methylation and chromatin structure. This finding will have a significant impact on our understanding of diagnostic tests and chemotherapy treatment."

Professor Clark describes the new Kinghorn Cancer Centre as, "the light on the hill. We tend to be buried in our labs and it is pretty exciting to show the community it isn't just about the laboratory, but the interactions between both the clinic and the lab."

"I am a basic research scientist and I really do strongly believe that it is critical to invest in basic research because it provides the building blocks for new discoveries to be able to be translated into the clinic. Without basic research, which is a long term investment for our future, Australia would always be lagging the world for innovative medical treatments. What I love about the Garvan is that we invest heavily in basic research but then we also invest in moving our findings to clinical usefulness as fast as possible."

* Sections of DNA are cloned into bacteria - which when pooled together can be grown to prepare vast quantities of human DNA
** A type of protein that packages and organises DNA

Celebrating a Historical Partnership

In its 50th year Garvan is proud to celebrate its historical partnership with the MLC Community Foundation. Garvan was established in 1963 with a significant philanthropic gift in memory of James Patrick Garvan; the founder of the company now known as MLC. Fast forward 50 years and MLC Community Foundation continues to provide vital support to ensure Garvan remains at the cutting edge of medical research. Most recently MLC Community Foundation invested in a piece of equipment that was the first of its kind in Australia and is used 24/7 to meet demand. What's the secret to our success? Both organisations share a rigorous commitment to the improved health and wellbeing of the community.



Feature story: *The Garvan Journey* (1963 - 2013)

Origins

The Garvan journey began 56 years ago when funds raised in conjunction with the centenary celebrations of the founding of St Vincent's Hospital by the Sisters of Charity were set aside "...to provide a building to enable the establishment of a research unit." The illustrious committee formed to oversee the unit's development included Sir John Eccles, the Nobel Prize winning physiologist, and Sir Edward Ford, Dean of Medicine at Sydney University. In 1961, a substantial donation of £100,000 was given to the fund by Helen Mills, the daughter of James Patrick Garvan (1843 - 96) who was one of the founders of the insurance industry in Australia. He was also a former Minister of Justice, Attorney General and Colonial Treasurer of NSW. And so the new St Vincent's research unit was named 'Garvan' in his honour.

The newly built Garvan Institute of Medical Research, which stood on the corner of Victoria and Burton Streets and Chaplin Lane in Darlinghurst, was formally opened by The Duke of Norfolk on February 17th 1963 at a ceremony attended by 1,500 supporters and dignitaries. The date was chosen to fit in with a lay-day in the Australia-England cricket test as the Duke was English team manager.

The first annual report noted with pride that the three Garvan researchers - Associate Professor John Hickie, Professor Les Lazarus, and Dr Jim Biggs - had established a number of new projects including studies of aldosterone

metabolism in cardiac failure, gonadotrophin in breast cancer, protein binding of steroid hormone, and iron metabolism*.

Growth, Expansion, and Change

Research in the '60s and '70s was dominated by endocrinology, fostered by the presence of the State Reference Laboratory for endocrine assays**. The late '70s and '80s were characterised by expansion of the scientific staff including the arrival of a critical mass of key senior researchers many of whom are now recognised as ground-breakers in their field.

These included: Professor John Eisman, a world leader in bone mineral and Vitamin D research; the late Professor Rob Sutherland who established one of Australia's most successful cancer research programs, initially in the fields of breast and prostate cancer but later diversifying into cancers of the pancreas, ovary, head and neck and lung; Professor Don Chisholm now a leader in diabetes research and care; and Professor John Shine, the first to clone the insulin gene and who was Garvan's Executive Director from 1990 to 2011.

In May 1984 the NSW Parliament incorporated Garvan as an autonomous non-profit research institute, "...to further knowledge in the field of human medicine by promoting the conduct of research in that field, being research which is consistent with the tenets of the Sisters of Charity." At the same time Garvan and

the University of NSW became formally affiliated, and the Garvan Research Foundation was established.

Perhaps the most significant event in the recognition of Garvan as a national heavyweight in medical research took place in the early '90s when Garvan was awarded a National Health and Medical Research Council (NHMRC) block funding grant. Garvan became one of only five 'centres of research excellence' in Australia, and the only such institute in NSW. Block funding, and a subsequent infrastructure grant from the NSW government, allowed for expansion of the Garvan site into a world class research facility and the opportunity to increase the number of scientists towards 250.

In 1990, after 25 years of leading Garvan, Professor Lazarus retired and Professor John Shine took over as Executive Director. Professor Shine's appointment coincided with the explosion of genetic technologies and the possibility of finally understanding the molecular basis of health and disease. To reflect this, Garvan's scientific effort was divided into four research divisions: Bone and Mineral, Cancer, Neurobiology, and Metabolic Research. The Immunology Program was added in the late '90s. The mid to late '90s witnessed the complete rebuild and extension of Garvan facilities into the Frank Woolley designed building of today with the iconic staircase.

The year 2012 saw two new milestones in the Garvan journey. Firstly, in January, Professor John Mattick took up the role as Garvan's next Executive Director following the retirement of Professor Shine after more than 20 years leading the Institute. Professor Mattick has made a significant contribution to the understanding of genetics and genomics through his farsighted theories on 'junk' DNA. And in late 2012, The Kinghorn Cancer Centre (TKCC), a joint venture between Garvan and St Vincent's Hospital, opened its doors. TKCC's vision is to realise the promise of innovative personalised medicine for people affected by cancer and it will focus on translational research and personalised cancer care.

Scientific Highlights

Year after year, Garvan researchers continue to perform at the highest level - they win competitive grants and publish innovative research in esteemed academic journals. Last year researchers

published 219 peer reviewed research papers in journals with an average impact factor over 8 (a measure of importance of a journal within its field). This places Garvan above internationally accepted benchmark levels and is testament to the excellence of Garvan science and scientists.

It was the Diabetes and Obesity Program that first placed Garvan on the international medical research map when, in the 1970s, Professors Ted Kraegen, Don Chisholm and Paul Compton developed a computer model of blood glucose and insulin control which led to the first bedside insulin infusion system, or 'artificial pancreas'. Research in the program then led to the first low-dose intravenous insulin therapy for diabetic ketoacidosis*** - a discovery that has saved countless lives worldwide. More recently, in a landmark discovery, the team uncovered the role of abdominal fat, as opposed to 'butt fat' in determining risk of Type 2 diabetes and influencing insulin resistance. In recent years, the Program has focused particularly on the relationship of adipose tissue to the impairment of insulin action and insulin secretion, leading to development of Type 2 diabetes; this has involved identification of molecular mechanisms in studies extending from single cells to full scale human studies.

The Osteoporosis and Bone Biology Program focuses on the genetic, hormonal and lifestyle influences on optimum bone mass. In 1997, Professors John Eisman and Tuan Nguyen's group published breakthrough data showing that the Vitamin D receptor gene is responsible for differences in bone density. The program also runs the Dubbo Osteoporosis Epidemiology Study (DOES), which began in 1989 and is the world's longest running large-scale epidemiological study of osteoporotic fractures in men and women and has established bone fracture as a major mortality risk. Most recently, DOES has enabled the development of a calculator for the risk of a bone fracture in people over 60; the calculator has been licensed to Merck Sharpe & Dohme who are preparing an iPad application for use by GPs.

The Neuroscience Program explores disorders such as Alzheimer's and Parkinson's disease, eating disorders, pain and hearing loss. In 1991, Professor



Mr Barry Unsworth, former NSW Premier (left) with Professor Leslie Lazarus (right) at Garvan's 1986 AGM.

Hebert Herzog was the first to clone the neuropeptide Y (NPY) receptor, a brain molecule that plays unique and critical roles in the immune system, in the regulation of appetite, and in bone synthesis. More recently the Neuroscience and Immunology Programs collaborated to publish ground-breaking data that identified the pathway that reveals how stress can suppress the immune system. And in 2011, the NHMRC awarded pain researcher Dr Greg Neely a prize for the top grant application in the country for his 'highly innovative and potentially transformative project' which maps corresponding pain genes in fruit flies and humans.

The Cancer Program investigates the genetics, epigenetics, and cellular and molecular biology of breast, colorectal, lung, ovarian, pancreatic and prostate cancers. The strength of Garvan's cancer program is reflected in the opening of the TKCC which places Garvan cancer researchers at the national epicentre of new diagnostics and therapeutics for cancer. Previously, the program was responsible for one of the top 20 advances in breast cancer of the 1990s when a group led by the late Professor Rob Sutherland, discovered the role of cyclins in breast cancer. More recently, Dr Alex Swarbrick found a way of shrinking tumours in certain cancers which are caused by a new class of genes known as 'microRNAs'. He identified one particular microRNA (microRNA 380) that appears to disable the king of tumour suppressors, the P53 gene. This finding holds promise for the future treatment of microRNA-induced

cancers. Due to its expertise in pancreatic cancer research, in 2009 Garvan took a leading role in the Australian arm of the International Cancer Genome Consortium, a global body cataloguing the genome of the 50 most common cancers. Identifying whole cancer genome sequences will allow researchers to pinpoint the exact molecular aberrations of each tumour, and will therefore make it easier to target them with the most appropriate treatment.

The Immunology Program was established by a major bequest in 1998 and began with the recruitment of Professors Charles and Fabienne Mackay. It received a major boost in the mid-2000s with the recruitment of several new research groups headed by Emeritus Professor Antony Basten working on autoimmunity and allergy.

Research in the Immunology Program has led to the formation of a spin-out biotechnology company, G2 Therapies, which developed a monoclonal antibody therapy for rheumatoid arthritis. Clinical trials are currently underway. More recently, the current Program Leader, Associate Professor Robert Brink published innovative data explaining how infection can trigger B-cells to inappropriately launch an autoimmune attack, a process poorly understood until now.

* aldosterone and gonadotrophin are hormones; protein binding tests measure the degree to which particular drugs may bind to blood proteins - this is a measure of drug efficacy
 ** measurements of hormone levels in the blood
 *** a life-threatening complication of people with diabetes



Left to Right - The late Professor Rob Sutherland, Professor John Eisman, Professor John Shine, Professor Don Chisholm and Ms Norma Perry circa 1990.

Researcher Profile: Professor David James

Professor David James, Director of the Garvan's Diabetes and Obesity Program, often starts his seminars with a quote from Hippocrates, "If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have found the safest way to health." He then follows up with a quote from WHO's 2012 obesity report, which aims to make "...regular physical activity and healthier dietary patterns affordable and easily accessible to all."

These two quotes summarise the millennia-old problem that Professor James is trying to solve. Indeed, he describes himself as "...one of the good guys, fighting the ever-expanding gang of thieves - metabolic disease, obesity and diabetes and their associated partners in crime, which include some types of cancer, Alzheimer's disease and cardiovascular disease."

Professor James started his scientific career at the Garvan in the late 1970s, firstly as a research assistant working under Professors Ted Kraegen and Don Chisholm processing insulin and glucagon assays for the St Vincent's endocrine clinic, and later as one of only two PhD students in the Institute. An early interest in biochemistry and metabolism had led him to the Garvan where he describes there being "an intimate connection between the clinic and the science."

The chance to rub shoulders with clinicians at St Vincent's Hospital was integral to Professor James' early career, "You got to chat about the big picture, and learn about medicine and clinical application. It put everything into context. That had a very significant impact on me."

It was this close interaction between scientists and clinicians and the fact that Professor James is a "Sydney boy" that eventually drew him back to the Garvan after completing postdoctoral training elsewhere and running labs in St Louis and Brisbane.

It was during his postdoctoral training that Professor James made what remains a landmark finding in diabetes research - how glucose is ferried from the blood stream into muscle and fat cells. Discovering GLUT4, the insulin-regulated glucose-transporter protein, "was like sitting on Mt Everest," says Professor James.

Nowadays, the Garvan has over 100 people working on the problems of diabetes and obesity, and those in Professor James' group are working to understand the complex interaction between the environment, especially increased food intake, and genetics, "We are at an historical moment in science. Genomics is about to become one tool in the physician's toolbox."



Professor David James

We can now sequence people's genomes and phenotype people with diabetes much more accurately than just taking their blood glucose level.

Already genomics and other 'omics allow us to look more deeply and use information to predict what is going to happen later in the lives of patients," says Professor James.

The challenge of research is "what gets me up in the morning," says Professor James. But the success of 'big data' research and its impact on diabetes and obesity depends not just on technology, but on the people in Professor James group, "We are only as big as the sum of the parts and we work together as a team."

What the Future Holds.....

Executive Director Professor John Mattick AO FAA reflects on 50 years of research at the Garvan, and discusses what the next 10 years might hold.

What are your thoughts when reflecting on Garvan's history?

At the 50th anniversary, it is important to remember that the Garvan Institute has two special stories of origin. The first is the legacy left by the Sisters of Charity who believed it was important to not just treat disease, but to try and beat disease. And that spirit stays today.

The second is to remember the Garvan family who made a special donation just over 50 years ago to establish a research institute in honour of James Patrick Garvan. It was a magnificent gift, and in a sense a seed was planted. That tree is alive and well and growing 50 years later, and will continue to give to the Australian population for many years to come.

What makes Garvan and The Kinghorn Cancer Centre so special?

We have a long history of research and innovation in cancer, diabetes and obesity, immunological diseases, neurological diseases, and osteoporosis. Garvan is one of the country's, and the world's, leading research institutes in these areas. And every one of these diseases is a major problem, particularly in a population that is living longer because of past advances in medical research and treatment.

The Kinghorn Cancer Centre, which is a joint venture between the Garvan and St Vincent's Hospital, is the first comprehensive cancer centre in the nation where clinicians who are treating cancer work side-by-side, day-by-day with cancer researchers who are working on new methods to diagnose and treat cancer. The establishment of this new centre coincides with a massive change in our scientific understanding of human genetics and the molecular basis of cancer. The Kinghorn Cancer Centre will lead the nation in the application of new genetic technologies to diagnose and effectively treat cancer.

Can you tell us a bit more about genomic medicine?

Genomics involves sequencing an individual's entire DNA, as well as analysing their gene expression patterns. Having access to this information enables us to determine the full molecular signatures of different cancers, and the best treatment options and approaches. Tumour sequencing has already been used to identify mutations and successfully inform treatment.

Soon, personalised genomic medicine will be routine. Doctors will use patients' complete genetic sequences to factor in variations between individuals when deciding how to treat diseases. Within the next decade, we will be contemplating having everybody's individual gene sequences as part of their medical records. Genomics will become embedded in the health system.

Genomic medicine provides so many opportunities, but are there any challenges?

A challenge is an opportunity! If you can reasonably anticipate what is happening, then you have an opportunity to get ahead of the curve.

One big challenge for the healthcare system is to embrace these innovations. Another challenge is how to assemble the information into useable databases. The information must be gathered, curated and translated into advice for the clinicians and patients. The technology is no longer the issue - it will be the gathering and provision of the information that will be critical.

Why does medical research need philanthropy?

Philanthropy has a dual purpose. Firstly, to underpin basic research projects, programs and infrastructure, but more importantly, it empowers the visionary individuals who have new ideas.



The Kinghorn Cancer Centre

Philanthropy is critical because public funding systems tend to be, by nature, conservative and orthodox. At Garvan we have people who often have insights well ahead of the curve, and we need to have the resources to attract and equip them to invent the future. Philanthropy leverages great people with great ideas at good institutions, and in turn they feed back to the community.

We like to involve our donors in what we do so they become part of the journey and excitement of discovery. Much of our research is built on the base which has been founded by generous donations from people who want to make a difference.

What can we expect from Garvan 10 years from now?

The Garvan is the light on the hill. It will be the leading institute of the nation in the application of genomic medicine, in understanding human disease, and in advancing the prevention and treatment of complex diseases like cancer. Genomic medicine is a conceptual change that will transform the medical landscape. By the end of the decade, we will be genotyping each type of cancer to get rapid and precise diagnosis and treatment options.

Week by week, research may seem slow and frustrating, but then you have wonderful breakthroughs, and decade by decade the changes are enormous. Just think - it is only 70 years or so since penicillin became available. And we can now sequence the whole human genome for \$5000 in three hours - a decade ago it took 10 years and cost \$1 billion. The pace of change in molecular biology and medicine is just staggering. We have made enormous progress. The next ten years will see enormous progress in the understanding of human biology, most excitingly in the brain, the next frontier, and in the development of new ways to overcome disease.

The Power of Giving

For every dollar scientists are granted, we must raise a further 70c to ensure they have the support and infrastructure available to carry out their essential research effectively. Philanthropic supporters are deeply embedded in the history of the Garvan and have facilitated some remarkable achievements.

The Immunology Program was established following a major bequest in 1998, and a major breakthrough of this team has been the development of a new treatment for rheumatoid arthritis. The new Kinghorn Cancer Centre, a joint venture of St Vincent's Hospital and the Garvan Institute is a world-class facility that brings cancer patients, clinicians and researchers closer together. The Centre's aim is to realise the vision of personalised cancer care. This vision would not be possible without generous private donations and strong community support that we rely on and for which we are very grateful.

Last year more than 11,000 individuals and organisations made donations to the Garvan's work through the Garvan Research Foundation and contributed more than \$19 million towards Garvan's medical research. An additional \$700,000 was left to Garvan in generous far-sighted bequests. This is incredible growth from the \$110,000 raised in 1981, the Foundation's first year.

Coming Up

Garvan Public Seminars

Thursday 16 May - Cancer in the Age of Personalised Medicine.

Thursday 15 August - The Science of the Brain.

Thursday 14 November - Diabetes in Modern Australia.

For more information or to register for Public Seminars visit www.giving.garvan.org.au/seminars or phone (02) 9295 8110. Seminars are free, but registrations are essential.

Young Garvan Events

Thursday 21st March - "Does my bum look big in this?" The science of fat and diets forum. For more information, www.giving.garvan.org.au/garvan-institute/young-garvan/2013forum1, registrations open 3rd February.

Thursday 30th May - "Stress: is your job slowly killing you?" Registrations open approximately 10th April. For more information, www.giving.garvan.org.au/aboutyounggarvan.

Saturday 13th July - Young Garvan All Ribbons Ball at the Hilton Sydney. For more information www.giving.garvan.org.au/allribbonsball.

Garvan Gala

Saturday 25th May - Sofitel Sydney Wentworth Hotel. For more information go to www.giving.garvan.org.au/gala or phone (02) 9295 8110.

In Memoriam November 2012 - January 2013. Donations have been made in memory of:

David G Aitken
Maureen Aronson
John Ying H Au
Lynette Ball
Susan Bayley
Joy Beazley
Helene Bell
Peter Boersma
Kevin A Boyle
Valerie Bulluss
Annabel Catt
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Adrian Notley
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O'Brien
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Merril Phillips
Neta Prior
Robert J Rice
Mandy Shannon
Nicola Silvestri
John Smith
Kalla Stanley
Vasily Stavropoulos
Gemma Stella
George Stewart
Professor Rob Sutherland
AO FAA
Stephanie S Waley
Monty Walker
Gordon Weeks
Rene Wiecek
Suzette Yuen

2009 Identified the links between diet, gut bacteria and the immune system, highlighting the importance of insoluble dietary fibre in keeping many diseases at bay

2010 Demonstrated for the first time that a primary tumour can be shrunk by inhibiting a class of gene known as 'microRNA'



BE PART OF PROGRESS

Please use this coupon if you would like to make a donation to Garvan's breakthrough medical research, or if you would like further information. We would love to hear from you.

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Please Send Me Further Information About:

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Please Change My Communications:

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 I only wish to receive *breakthrough* by email
 I only wish to receive appeal mailings in May/June
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My cheque/money order made payable to Garvan Research Foundation is enclosed

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Donations of \$2 and above are tax deductible.

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Reply Paid 68593, Darlinghurst NSW 2010

☎ Call: **1300 73 66 77** (9am to 5pm)

☎ Fax: **(02) 9295 8507**
(you can use this coupon)

🖱 Online: www.giving.garvan.org.au



CELEBRATING
50
YEARS
1963-2013

2010 Showed for the first time that even modest weight loss of 6kgs reverses many of the damaging changes often seen in the immune cells of obese people

2011 Developed a reagent with the potential to prevent rejection of transplanted insulin-producing cells in people with Type 1 diabetes