RAH
RESEARCH
FUND

Royal Adelaide Hospital Research Fund

Annual Report 2013–14

Contents

$1,300,000

grants supported over 30 different researchers

$852,000

spent on providing new equipment for research laboratories

Message from the Chief Executive Officer

When I meet the nurses, doctors and researchers who work at the Royal Adelaide Hospital campus, I constantly hear success stories. Stories of ground-breaking surgical techniques, lifesaving care and important medical breakthroughs – the Royal Adelaide Hospital's research, care and support touches people from right across South Australia.

Donors make a very significant contribution to the success of the Royal Adelaide Hospital by providing vital funds to the RAH Research Fund. Those funds go to priority research areas and projects that need funding. To each and every one of our donors, I extend the utmost appreciation and gratitude on behalf of all our researchers whose work you support.

Our researchers are closely affiliated with Hospital departments; this strong bond ensures a close alignment of research with the needs to improve medical practice through translational research. We are ideally placed to drive the best research; from basic discovery science to applications in clinical, translational, public health and health services.

Researchers here at the RAH are an incredible group of people who dedicate their lives to making a positive difference to the community. Their efforts will alleviate suffering by developing better treatments and potential cures for any number of diseases.

The RAH Research Fund's role is to serve as the dedicated fundraising office for the Hospital and its research institutes.

We are proud that during 2013-2014 financial year, the Research Fund supported over 30 different researchers via $1,300,000 of grant funding. Those grants included $750,000 for investigations into cancer and 8 grants for new projects investigating cancer, diabetes and cardiology.

In addition, $852,000 was spent on providing new equipment for research laboratories. Details of the equipment purchased can be found on page 26.

The RAH Research Fund receives no direct government funding, relying only upon the generosity of the local community, business and its own fundraising efforts. One of many not-for-profit organisations in Australia, the Research Fund makes a significant contribution to the future wellbeing of South Australians through the funding of critical medical research.

This annual report provides an opportunity to reflect on the achievements of the RAH Research Fund and the valuable support given by our generous donors. Each year, thousands of individuals and organisations give donations, grants and bequests to the Royal Adelaide Hospital for many reasons – in recognition of the care they've received, in memoriam or celebration, or in support of particular appeals, departments or areas of medical research.

I would like to take this opportunity to extend my sincere thanks to our donors, staff and volunteers who make medical research at the RAH possible.

David Panter
Chief Executive Officer
Central Adelaide Local Health Network

Message from the Fundraising Manager

Asking individuals, businesses and community groups for donations is not a calling for everyone. It takes a special team and a special cause.

Here at the Royal Adelaide Hospital Research Fund our team of fundraisers are committed to finding people who share our vision of funding medical research to improve the health of our community.

In the 2013/14 financial year the RAH Research Fund has raised $4,489,343 – which says a lot about the dedicated staff and volunteers of the Fund; but I think it says a lot more about the generosity and commitment of our donors, corporate sponsors and other financial supporters.

I offer a sincere and heart felt thank you to all our donors and supporters.

With South Australia facing a rapidly aging population and an increasing prevalence of lifestyle related diseases, the pressure on our researchers and doctors to find new and innovative treatments is ever present. Over the last year we have focused our activities on supporting the very best medical researchers as they strive to find cures and improve care for all in our community.

Our researchers can only achieve their vision to find cures and save lives with the commitment and generosity of our donors.

As a result of the wonderful support from our donors, we were able to distribute $1,300,000 in grants for research to promote investigations by our researchers.

Our wonderful volunteers committed thousands of hours providing a range of services to help patients and their families.

Government funding for hospitals such as the Royal Adelaide is often restricted by budgetary constraints; available funding is being placed under further pressure as demand for hospital services increases due to an ageing population.

The Research Fund's purpose, therefore, is to raise money that will enable our doctors, nurses and researchers to achieve the best outcomes for our patients. We aim to provide our health professionals with the technology, facilities and services that may not otherwise be accessible, allowing them to conduct vital research.

You can support our health professionals by making a donation, attending our various events, organising your own fundraising event, leaving a bequest to the Research Fund in your will, or nominating the Fund as your workplace's charity of choice.

This report has been prepared for you to provide a better understanding of the work that is being done by our researchers and the RAH Research Fund in the unrelenting pursuit of better health for all South Australians.

There are many ways you can help, and we would be delighted to discuss these opportunities with you or your company, simply contact the RAH Research Fund on 08 8222 5281.

Mark Goldsmith

Mark Goldsmith
Fundraising Manager
Royal Adelaide Hospital Research Fund

Over the last year we have focused our activities on supporting the very best medical researchers

our researchers strive to find cures and improve care for all in our community

The RAH Research Fund

The Royal Adelaide Hospital Research Fund believes everyone who is sick deserves access to the best possible treatment and care. We strive to make this possible by raising funds for medical equipment, life-saving research and enhanced patient services.

Almost everyone has been touched by the impact of medical trauma – whether it is cancer, heart disease, stroke, diabetes, dementia, age related illness or other medical complications.

With the support of our donors and corporate sponsors we can make a positive impact in the lives of people in our community through research into the diseases and illnesses that affect those people.

The RAH Research Fund works with supporters, corporate partners and the community to raise funds for that research. Most of the funds raised are through the generosity of everyday South Australians who support the Research Fund with donations, by participating in fundraising events, or by leaving a gift to the Research Fund in their will.

The RAH Research Fund invests your donations in medical research, enabling our doctors, nurses and researchers to find faster diagnoses, better treatments and ultimately cures for illness. The Research Fund also funds state-of-the-art hospital equipment that will improve patients' quality of care, and technical equipment that enables researchers to make their discoveries.

The RAH Research Fund staff: Vicki Sage, Mark Goldsmith, Alexia Rocha, Matt Jackson, Julie Dunlap, Michelle Robb

One of the many ways the Research Fund keeps in contact with our valued supporters is through mail. We know that you want to know how your donations are being spent – our mail campaigns are one way we communicate the many research advancements made possible with this support. If you are inspired by the research detailed in these letters, please continue your support by sending in a donation.

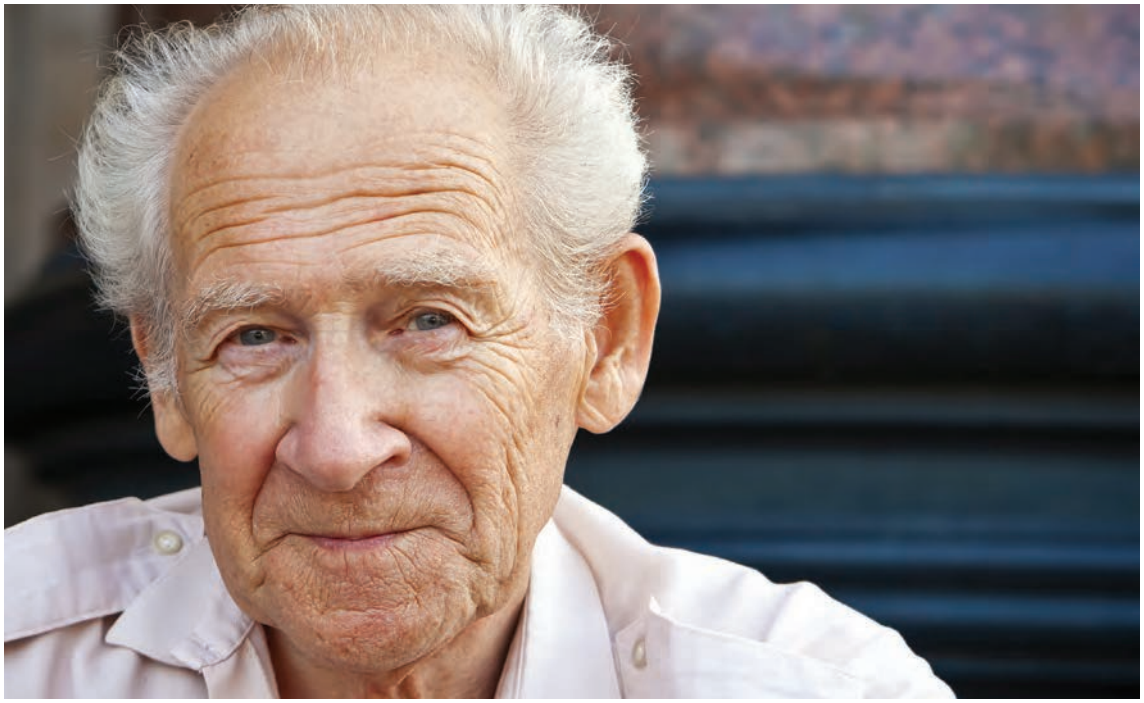
The Royal Adelaide Hospital Research Fund was established in 1981 to work as the fundraising office of the hospital, supporting researchers in the hospital and the Hanson Institute. Today the Research Fund works with community members, businesses, and trusts to raise and distribute those funds for the betterment of the South Australian community.

The Research Fund ensures that every donation received is allocated to the area the donor nominates. We are always happy to provide information about how we use donations and the practical ways in which they help to provide the best possible medical care and world-class research.

The Research Fund runs a low-cost office operation to ensure that we consistently maximise the impact of your donation. It has six enthusiastic staff members, and two volunteers who work across a range of areas, including corporate sponsorship, bequests and donor relations. Members of the Research Fund office also organise fundraising events and assist volunteer fundraisers to organise their own events and activities in support of the Hospital.

None of the achievements that have been made this year, or the work that is planned for in the months ahead, would be possible without the generosity of our donors to whom we are extremely grateful.

Thank you for your generosity and support.



Vision and Values

The Central Adelaide Local Health Network (CALHN), of which the RAH Research Fund is a member, strives to be recognised for its high quality health-care services and excellence in research and education.

CALHN cares for people in the local area, and supports all South Australians through its services which include the Royal Adelaide Hospital and the RAH Research Fund.

Your support enables the Research Fund to advance outstanding medical research that is translated into practical treatments and potential cures for all members of our community. Your support enhances the high quality care provided by doctors, nurses and allied health workers at the Royal Adelaide Hospital.

Together, with donations from you, our medical researchers working alongside our doctors and nurses, can make major breakthroughs with real outcomes for now and the future.

Mission

To deliver outstanding compassionate care, education and research, to be loved locally and renowned globally.

The RAH Research Fund supports this mission by sourcing donations to fund research to find cures and save lives, and provide the excellence of care offered by the Royal Adelaide Hospital.

RAH Research Committee

The Royal Adelaide Hospital has a strong record of clinical research, and participates in collaborative medical research with the Hanson Institute, the Centre for Cancer Biology and SA Pathology.

Many departments of the hospital – gastrointestinal medicine, thoracic medicine, rheumatology unit, cardiology and renal medicine – have laboratories in the Hanson Institute.

The RAH Research Committee provide an administrative, advisory and support service to researchers funded by grants. One of its major roles is to monitor the use of research funds to ensure that conditions of the grant are being met. The RAH Research Committee continuously reviews research policies, and is responsible for maintaining an overview of research activity across the campus.

The Research Committee also liaises and negotiates with external organisations such as the National Health Medical Research Committee (NHMRC) on behalf of grant holders and researchers.

Research Grants

The Mary Overton Early Career Fellowship

The aim of this fellowship is to encourage a person of outstanding ability to make biomedical research a career in one of the laboratories on the campus of the RAH.

The fellowship is for a maximum of three years and is open to University graduates with a doctorate (or higher degree) in biomedical or health sciences or relevant specialist training and research. The candidate must be actively engaged in health-related research.

RAH Research Committee Honours Scholarship

This $2,000 scholarship enables students to undertake hands-on research under the supervision of an experienced investigator. Students are supported to make the next step to a career in science with training in critical thinking skills, scientific communication and personal organisation.

Candidates must have completed a Bachelors Degree in the biological or health sciences and their research project must be based within the Royal Adelaide Hospital, SA Pathology or the Hanson Institute.

Florey Fellowship

The Florey Fellowship is awarded to candidates who have demonstrated significant research potential in their early post-doctoral or post medical specialist training years. The fellowships are generally for a maximum of three years.

Candidates are expected to introduce new disciplines or skills to enhance existing research strengths of the Royal Adelaide Hospital. Preference is given to those with a recent post-doctoral or post-medical specialist position overseas or interstate, if they bring new and innovative skills and research to an active research group.

Their proposed research project should have a strong focus on health science research and be undertaken on the Royal Adelaide Hospital campus.

Dawes Top-Up Scholarships

Top-up scholarships are awarded to medical or dental graduates eligible for registration in South Australia. Or to appropriately qualified science graduates or health professionals for the purpose of receiving training in research methods leading to a higher degree in the University of Adelaide or University of South Australia.

The Dawes Top-up Scholarship is $5,000 per annum. The research project on which the training is based must be performed within the Royal Adelaide Hospital, SA Pathology, the Hanson Institute or associated academic departments.

Dawes Fully-Funded Scholarships

Fully funded Dawes scholarships are awarded to medical or dental graduates eligible for registration in South Australia. Or to appropriately qualified science graduates or health professionals for the purpose of receiving training in research methods leading to a higher degree in the University of Adelaide or University of South Australia.

The research project on which the training is based must be performed within the Royal Adelaide Hospital, SA Pathology, the Hanson Institute or associated academic departments. The scholarship is for three years.

A R Clarkson Scholarships

These Scholarships are named in honour of Dr A R Clarkson, a Renal Physician and director of the RAH renal unit from 1973–1997.

Dr Clarkson had a huge influence on nephrology and medicine in general in this country and was an outstanding contributor to medical education on the RAH campus. This scholarship is designed to encourage medical graduates to undertake a substantial commitment to research.

Two scholarships are offered, each for three years at $100,000 per year. Applicants must be enrolled in a higher degree academic training program, preferably a PhD, and conduct their research on the RAH campus.

Clinical Research Grants for Allied Health, Pharmacy and Nursing

These research grants are designed to support and promote clinical research by non-medical health service staff within Royal Adelaide Hospital that will ultimately lead to improving health outcomes for patients.

Grants of $30,000 are intended to support research centred on patients and are intended to conclude in one year. Funds will assist investigators striving to establish new programs or new directions or address clinical problems that are unlikely to attract industry funding.

These grants are open to departments and units of the Royal Adelaide Hospital – Audiology, Clinical Dietetics, Clinical Pharmacology, Clinical Psychology/Neuropsychology, Health Promotion, Nursing (clinical), Occupational Therapy, Orthotics and Prosthetics, Pharmacy, Physical Education, Physiotherapy, Podiatry, Social Work, Speech Pathology.

The grants are also open to SA Pathology, the Hanson Institute, or affiliated University Departments operating on the Royal Adelaide Hospital Campus.

Clinical Project Grants

The value of this grant-in-aid is up to $50,000, and is used to fund clinically relevant research at the RAH campus by clinical investigators. Research must focus on patients with clinical problems. Preference is given to research started overseas or interstate, particularly if the project will bring innovative research skills to the campus. Collaborations between scientists and clinicians are encouraged.

The investigator should have a proven track record of performing innovative research.

Grants provide funding for clinically relevant research.

Royal Adelaide Hospital

The Royal Adelaide Hospital is a member of the Central Adelaide Local Health Network (CALHN).

Established in 1840, Royal Adelaide Hospital (RAH) is a 650 bed hospital and teaching arm of the Universities of Adelaide and South Australia.

The hospital treats adult emergency and elective patients in a wide range of specialist areas. It offers a major trauma service and an intrastate, interstate and overseas retrieval service.

In the 2013/14 financial year the hospital admitted over 82,000 patients, treated 14,400 chemotherapy day patients, and 19,987 renal dialysis day patients. RAH has treated 463,455 outpatients, including over 72,157 emergency department patients.

The RAH has a strong record of medical research, and also participates in a significant number of basic research programs in collaboration with SA Pathology, the Hanson Institute, the Centre for Cancer Biology and the University of Adelaide.

Projects include research into

- molecular biology,
- cancer,
- bone and joints,
- allergies,
- infectious diseases, and
- heart disease.

A number of hospital departments (gastrointestinal medicine, thoracic medicine, the rheumatology unit, cardiology and renal medicine) have laboratories in the Hanson Institute.

The new RAH is scheduled to open in 2016 providing world class health care and facilities for South Australians. It will harness the latest in architectural design to create a healing environment for patients and their families, provide an efficient and positive working environment for staff and minimise its environmental footprint.

2013/14 results

We know that there are thousands of worthy causes our donors could choose to support, so we are exceptionally grateful that they entrust their donations to us and to continuing the lifesaving work of the Royal Adelaide Hospital.

Significantly, in the 2013/14 financial year both our donors and their donations continue to grow. In this financial year the RAH Research Fund raised $4,489,343 to fund innovative medical research.

By supporting the Research Fund, our donors are building a healthier community, now and for the future.

The Research Fund goes to great lengths to ensure our donors are kept up to date with the innovative work that is being done by the researchers here at the RAH, the Hanson Institute and SA Pathology. We utilise regular direct mail letters and bi-annual newsletters to keep you informed about how highly we value your support of the Research Fund, and which areas we fund using your donations.

We closely monitor the use of your donations, and importantly, ensure the funds that you entrust to us are put to work conducting research, acquiring the most up-to-date equipment and funding clinical trials as per your requests.

The RAH Research Fund ensures that absolutely every available cent from every dollar donated is used to fund research. The Research Fund's office is run on a very tight budget with a minimum of staff. All expenditure is closely monitored and only funded if absolutely required.

The Research Fund takes it's spending on administrative costs seriously. On average 83 cents out of every dollar donated in the 2013/14 financial year went to research. The remainder was used to cover administrative costs such as secure financial record storage, printing costs, computers, compliance costs, postage, communication costs, wages, software licence fees and other operating costs.

Amount raised this year

Patients and their families are at the centre of everything the RAH Research Fund works for. The support we provide is only possible because of the generosity of so many people.

Thank you to everyone who has fundraised, donated or volunteered during the past year. Without your contributions, we would not be able to help the hospital and its researchers in their work to find cures.

We would also like to acknowledge the valuable support of our volunteers, both at the hospital and those who carry out their own fundraising events around the state.

State and Federal Government funding provides essential health services and some research funding, but it cannot pay for everything. The RAH Research Fund's role is to help fill the gap; to provide those extras that will help patients receive the finest health care possible.

The RAH Research Fund's results for the 2013/2014 financial year are:

Received from donations – $4,489,343 (includes memorial gifts and bequests)

These funds were donated by 6,141 generous individuals and 213 supportive organisations.

The top five areas of research that our donors specifically wanted to fund were:

1. Haematology
2. Cancer
3. Melanoma
4. Radiotherapy
5. Rheumatology

Twenty six generous individuals made the decision to leave a bequest to the RAH Research Fund in their will this year.

They were the estates of:

Harry Robert Allchurch
Margaret Angove
Nancy Vera Birdsey
Audrey Patricia Brunt
David W Dean
Maria Dubicki
John Richard Hindes
Alan Victor Hutton
Barbara Ide
Joan & Ross Kennewell
Marjorie May Kloss
Nancy Lou Kruger
Kathleen Brenda Langaard
Georgena Lillian Mcgregor
Richard Charles Wynne Perkins
Kathleen Mavis Poynter
Wayne Trevor Pulford
Herbert Schlank
James Ivan Shackleford
George Edward Southgate
Ngoc Anh Thoi
Leslie Thompson
Winifred Amy Turner
Archibald S K Whitman
Gladys Ivy Winch
Terence Cornthwaite Wollaston

We thank our bequestors and their families for their thoughtfulness and generosity.

Memorial gifts were gratefully received by the Research Fund this year in memory of the following people:

William Harvey Adams
Louis (Lou) Raymond Ahrens
Roy Albert Ainsworth
Brian William Alexander
Frigerio Ambrusco
Michael John Anderson
Ian Richard Ashby
Maria Asimakopoulos
Efthimios (Tim) Athanasoulis
Robert John Baker
Steve Balacco
William (Bill) Ballintyne
Nikolaos Baslis
Betty Bateman
Irene Caldow Bates
Mark Howard Batten
Lorraine Joyce Battle
Brian Bennett
Kitty Maud Bennett
Helen Bilecki
Nancy Vera Birdsey
Pete Bitter
Marion Petra Black
Louise Blake
Frank Trevor Blevins
Cathrin Bowd
Robert Burgess
Carmela Cammarere
Carmela Caputo
Antonio Carbone
Romana Carbone
Frank Care
Alwyn Carlin
Gary Romilly Carman
Rocky Daniel Caruso
Frank Cass
Marion (Kay) Chambers
Anthony (Tony) Russell Clarkson
David Michael Cleary
Geoffrey John Clenton
Brian Robert Coad
Margaret Adeline Cochrane
Lucio (Lou) Colangelo
Donald (Darky) Frank Collins
Ian Cormack
Ray Courtney
Donald (Don) Crick
Peter Maxwell Day
Emelie Josephine De Bruin
Francesco De Cicco
Giuseppe De Ieso
Reginaldo De Luca
Robert (Bob) Quentin Deeble
Jean Pyper Deeprose
Brian Kevin Dobie
Lyn Dolman
Laurence Donhardt

Hazel Drummond
Clifford Gerard Dunn
Brian Edwards
Ossie Edwards
Joe Entwistle
Pasqualina Esposito
James Leonard Evans
Lisa Joanne Evans
Emanuel (Lino) Farrugia
Jack Featherstone
James Ferres
Rino Fighera
Kenneth Thomas Fowler
Bryan Thomas Frankham
Melva Lorraine Freeman
Bevan Fuller
Joan Gamble
Eric Garman
Cathryn Mary Gifford
Beverley Goldring
Graeme Storr Goldsmith
Graeme Charles Goodfellow
Kel Govey
Maria Assunta Granozio
Maria Catharina Granpre-Moliere
Joyce Doreen Grant
Roy Neily Grigg
Vicki Dianne Haggett
Lachlan Mcgregor Hall
Lucy Harrington
Dimitrios Hassouros
Helen Amelita Wyville Hayes
Eileen Florence Howell
Joyce (Joy) Helena Hunter
Antonio Ielasi
John Beresford James
Kooi-Kee (Bessie) Kam
Leslie Samuel Keller
Gwenyth Lorraine Kennett
Jane Kent
June Kirk
Ronald David Kirkwood
John Herman Kolthek
Keramea Komissa
Adam Lane
Cristina Lucia Leo
Robert John Lepeair
William Albert Lewis
Josephine Loncar
Judy Lord
William (Bill) Hector Lowe
Enrico Macchiavelli
Franco Gabriele Madonna
Brian & Horrie Martin
Alfredo Mastrogiacomo
Margaret Matheson
Peter Mawer
Jake Ward McKee
Nick McKenzie
Isabella Andrew McMillan
George Miari
Dimitrios Michalopoulos
Helena Mieszkuc
Malcolm Hayward Miller
Noreen Margaret Miller
Gil Morcom
Joyce Morton
William Robert Moseley
Shirley Jean Moss
Maureen Mulhern
Mai Lac Ngo
Doreen Noack
John Alfred Nolan
Lois Ellen Norman
Valerie Novice
Barry Oreilly
Kostantinos Papadopoulos
Keith George Paris
Esther Patterson
Tony Pearson
Dianne Phillips
Michael Polychronopoulos
U Prasads
Stephen Todd Preston
Antonio Pugliese
David Quee
Joseph (Joe) Percy Ransome
Harold Arthur Reu
Rodio Ricci
Jeffrey Colin Estcourt Robinson
Robert Rose
Cheryl Ann Routledge
Mark Collin Ryan
Karl Schiesser
Bernard John Schroeder
Tarlee Ann Schultz
Terry Seymour
Idrys Elwyn Simmonds
Frank Simson
David Smerdon
Shirley Rhonda Smith
Bogdan (Bob) Jaw Sobatkiewicz
Hans (Jack) Georg Splett
Norman Stephenson
Michajlo Szewczuk
Salvatore Tenaglia
Lena Ying Tham
Jean Tibbles
Bruce Tidswell
Deirdre Tidswell
James Patrick Tipping
John Michael Towns
Christopher P Treadwell
Lin Tucker
Donna Underhill
Chani Van Der Merwe
Hendrikus (Ben) Vanderberg
Desmond Ross Veale
Lorna Constance Walters
Keith Robert Weatherly
Marion Phyllis Weber
Ashleigh Whittaker-Rush
Elizabeth Dawn Wilson
Heather Wilson
Kevin Arthur Wilson
Shirley Withy
Ian Wood
Jozef Zurawska

Gifts donated on behalf of these memorials totalled $119,302 in this financial year.

Lyn, Sally, Graham, Angie Cynthia

Commemorative donations of $4,195 were received from the following families and their friends:

Jenny Agnew
Athena Efthimiou
Cheryl Fleming
Alistair Ray & Andrea Prior
Brian & Helen Spry

The Research Fund would also like to acknowledge contributions made by life members of the Research Fund. Thank you:

Robert Gerard AO
Fay Gerard
Maureen Goodwin
Gordon Pickard AM

The Royal Adelaide Hospital Research Fund Newsagency donates their profits back to the hospital via the RAH Research Fund. In the 2013/14 financial year the donation totalled – $176,162.

Over the last 24 years the Newsagency has donated over $1.4 million.

Located at the hospital's main entrance, the newsagency is a small shop, but offers a massive range of products and services, including:

- Passport photo service
- Discounted movie tickets – just $13
- Mobile phone chargers and accessories
- On-site mobile phone charging service
- Toys and gifts – new every month!
- Melba's chocolate range
- Bedside entertainment service vouchers
- Cards
- Stationery
- Magazines
- Newspapers
- Books

RAH Research Fund results for the last seven financial years

	2013/2014	2012/2013	2011/2012	2010/2011	2009/2010	2008/2009	2007/2008
Total fundraising Income	**$4,489,343**	**$3,260,586**	**$3,569,346**	**$4,160,634**	**$9,655,151**	**$4,032,424**	**$3,968,991**
Income from donations	$2,696,456	$2,413,683	$2,784,740	$3,230,026	$2,704,623	$2,778,874	$2,643,514
Income from bequests	$1,494,947	$604,648	$367,559	$794,441	$6,791,427	$1,067,698	$1,139,561
Income from sponsorship	$30,410	$37,160	$93,400	$32,960	$44,154	$18,400	$7,400
Income from grants	$20,000				$30,000		
Income from merchandise & other sources	$247,530	$205,095	$323,647	$103,207	$84,947	$167,452	$178,516
Total fundraising expenditure	**$765,782**	**$720,276**	**$764,754**	**$841,924**	**$726,501**	**$895,188**	**$569,499**
Ratio Income / Expenditure	**17%**	**21%**	**21%**	**20%**	**8%**	**22%**	**14%**

Every dollar raised by the RAH Research Fund is spent on improving the health of the South Australian community.

Direct mail appeals

Since the Royal Adelaide Hospital Research Fund was launched in June 1981, it has **funded more than $52 million worth of health care equipment, medical research and laboratory equipment** for the Royal Adelaide Hospital, and its research arms.

In the 2013/14 Financial Year, **the Research Fund raised $4,489,343**; while that says a lot about the dedicated staff and volunteers at the Research Fund – it says a lot more about the generosity and commitment of our donors, community fundraisers, corporate sponsors and other financial supporters.

We work diligently to ensure that your funds are benefitting the projects and research efforts you intended them to support. You can count on us to ensure a constant effort in supporting your wishes and ensuring that funds donated are put to the best use possible.

The RAH Research Fund sends out four appeals a year to donors. These appeals are our main fundraising avenue, and ask for donations to support the latest in medical technology, ground-breaking research and to upgrade patient or research facilities.

The appeals also help us to keep in touch with our donors, keeping them up to date with the needs of researchers and recounting positive stories that come from successful research.

In the 2013/14 Financial Year we sent out:

An appeal in September was mailed to our dedicated donors. **The focus of this appeal was to raise funds to enable Dr Quenten Schwarz to purchase a Zebrafish facility.** Dr Schwarz is from the Centre for Cancer Biology and wants to use the fish as a research tool to investigate cancer in children. The zebrafish facility will be also be used in a number of different studies by researchers at the Cancer Biology Centre and the Hanson Institute.

We were very pleased with the response generated by our November 2013 appeal. **The story outlined in this mailing told how policeman Darren Cornell, who was diagnosed with Acute Myeloid Leukaemia, benefitted from being put into a clinical trial at the RAH.** He spoke about how lucky and privileged he felt to participate in the trial and to now be healthy enough to return to work and spend time with his young family.

The next appeal asking for donations was sent in March 2014. This appeal related Claire's story – a 33 year old who believes she is only alive today thanks to medical research conducted at the RAH. **Claire underwent three kidney transplants,**

and due to groundbreaking research led by Professor Toby Coates of the RAH, her third transplant has not been rejected. Professor Coates has developed a therapy that removes the antibodies that prevent people like Claire from having successful kidney transplants.

The final donor mail out for this financial year was sent in May 2014, with an extremely generous result being received from our donors. This appeal focused on Pam Lloyd's battle with memory impairment. It also told the story of **work currently underway at the RAH's Memory Trials Centre, where they are trying to solve the dementia and Alzheimer's disease puzzles.**

This financial year the Fund also ran an appeal (in October), in an effort to increase our fundraising capabilities by attracting new donors to the Research Fund. This appeal resulted in the Research Fund welcoming many new donors to our community. **We extend a warm welcome to them all and hope they will join our donor community and continue to support the wonderful research that their generosity makes possible.**

The Research Fund also has a regular giving program, which comprises 480 donors. The vast majority (70%) are drawn from staff members of the Royal Adelaide Hospital and SA Pathology. Regular donations totalled $44,666 this year, with $14,286 coming from staff donations.

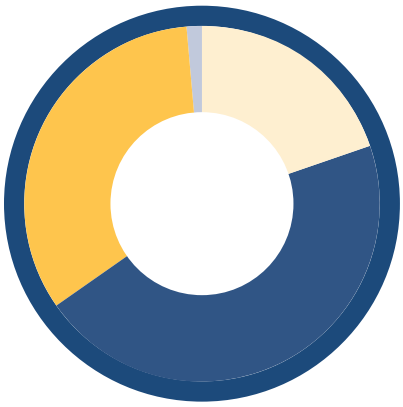
We are also working to build support from the many patients who are thankful for the care they receive at the Royal Adelaide Hospital. This strategy has resulted in donations being received from past patients, who then go on to become part of the RAH Research Fund community.

Our generous donors and the donations that we receive help us achieve extraordinary things and make a real difference to our researchers, and in turn, the South Australian community.

Highlights and updates of research are reported in our bi-annual newsletters. These are available in both print and electronic formats. If you would like to receive a copy please call us on **08 8222 5281** or email **RAHresearchfund@health.sa.gov.au**.

If you need any information or have feedback on any of our appeals, please contact the Research Fund on **08 8222 5281**, or email us on **RAHresearchfund@health.sa.gov.au**.

Our Donor Community



Bequests
33.3%
$1,494,947

Corporations
19.9%
$ 891,513

Community Events
1.3%
$60,676

Gifts from Individuals
45.5%
$2,042,207


HANSON
INSTITUTE
HANSON
INSTITUTE


SA
PATHOLOGY
SA
PATHOLOGY
PATIENT CENTRE
URGENT + BLOOD


Centre for Cancer Biology

$4,489,343

raised in 2013/14

Research that strives to find cures and better treatments

Who we support

A non-profit organisation, the RAH Research Fund was established over thirty years ago, and has been working over that time to benefit the community by raising funds to support the Royal Adelaide Hospital and it's research arms.

Today the Research Fund raises funds for medical research carried out on the RAH campus, which includes the Royal Adelaide Hospital, the Hanson Institute, the Centre for Cancer Biology and SA Pathology.

Our Research Fund donors have made a significant and lasting difference to the lives of many in the South Australian community. The research carried out on the RAH campus changes lives – every day!

Research funded by your donations means scientists can discover new treatments, procedures and diagnostic methods to cure disease, or at the very least improve a patient's quality of life.

Thanks go to our many donors, corporations and community fundraising groups who have supported the RAH Research Fund by donating or running events to raise funds. We also thank those individuals who have made gifts in memory of loved ones.

How your donations have been spent

This is just some of the laboratory equipment that your donated funds have been able to support the purchase of:

Cost	Equipment	Research Group	Purpose of Equip
$149,880	Covaris Focused Ultrasonicator	Cancer Genomics Facility	For sample preparation – delivers highly controlled and focused acoustic energy
$140,000	Zeiss Confocal Microscope	Haematology, Immunology & CCB	Equipment provides an optical image of the highest resolution, brings a clarity to images that is not possible with standard microscopes
$115,461	Neoscope Electron Microscope	Haematology, Immunology & CCB	Complements both optical microscopes and traditional scanning electron microscopes
$78,000	xCelligence Real Time Cell Analysis System	Immunology, Vascular Biology & Cell Trafficking Labs	System provides cell-based assays providing real time cellular analysis
$57,625	Beckman Optima Ultracentrifuge	Haematology, Molecular Regulation Labs	Spins samples at very high speeds
$51,385	Advanced Histomorphometry Microscope with Fluoresence	Chemical Pathology Musculoskeletal Biology Lab	Enables researchers working in cancer biology to image and quantitate features of bone related cancer at the tissue level
$30,000	Real Time PCR Machine	Immunology, Haematology, renal, Chemical Pathology, Surgical Pathology and the Hanson Institute	Equipment allows the study of gene expression in cancer biology
$24,940	Inverted fluorescent microscope	Opthalmic research	Used to observe living cells or organisms in culture under more natural conditions than a glass slide
$13,490	Thermo Scientific Nano Drop	Orthopaedics, Hanson, Bone Cell Biology, Chemical Pathology	This is a microvolume spectrophotometre for measuring DNA, RNA and protein
$10,995	Bio Rad Thermal Cycler	Immunology, Gene Regulation Lab	Used to amplify nucleic acids
$5,863	Micro Balance	Immunology	Capable of making precise measurements of weight of objects of relatively small mass

Donations received by the RAH Research Fund are used to support four main areas

1

To purchase cutting edge laboratory equipment to aid research

2

To fund medical researchers

3

To enable clinical trials to be run

4

To contribute to better patient amenities

In total the Royal Adelaide Hospital Research Fund made grants of $1,300,000 in 2013/14. By supporting research, clinicians are able to develop their research to the point where they can then apply for larger national grants to deliver better patient benefits. A criteria of the funding states that all research must be undertaken within the RAH campus – it can include the Hanson Institute, the Centre for Cancer Biology or SA Pathology.

Grants were awarded to the following researchers:

$20,000 to Dennis Lau to investigate aortic stiffness in lone atrial Fibrillation (irregular heartbeat) patients.

$45,000 to David Callen who is looking at gene expression changes in the progression of Barrett's oesophagus (a complication of gastrointestinal reflux).

$30,000 to Emma Karran who is asking – does targeted management of sub-acute back pain patients on surgical waiting lists reduce chronic pain and disability?

$2,000 awarded to Simon Tan who is investigating targeting optimal blood glucose concentrations during critical illness in the setting of hyperglycaemia.

$35,000 for Mark Plummer to investigate the effects of nutritional therapies and incretin (gastrointestinal hormone) therapies on gastric emptying, glycaemia and outcomes in critical illness.

$5,000 to Reshma Shajya for their investigation into preventing cancer metastasis through inhibition of mutant p53 oncogenic activities.

$49,910 awarded to Christine Feinle-Bisset who is looking at the utilisation of dietary amino acids and fatty acids to reduce energy intake and improve blood glucose control in obese subjects with type 2 diabetes.

$5,000 to Natalie Stevens who is investigating the development of a potent passive immunotherapeutic for the treatment and prevention of bacterial sepsis and septic shock.

$116,000 to Lisa Ebert who is using the funds to investigate DSG2 – a gene marker that may have vasculogenic (blood vessel formation) potential.

$84,000 for Melissa Pitman who is investigating the development and optimisation of sphingosine Kinase inhibitors as anti-cancer agents.

Your donations also support clinical trials.

Trials contribute to advances in medical research and are a method used by researchers to investigate and evaluate new treatments or techniques to combat disease. New treatments and drugs cannot be used until they undergo a strict testing regime via clinical trials. Trials must also be granted approval to proceed by an ethics committee.

Around 100 new clinical trials start at the RAH each year. These are just a few of the clinical trials that started in 2013/14:

A study of the long-term safety of Pirfenidone in patients with idiopathic pulmonary fibrosis (IPF). IPF has no cure yet, but research has helped doctors learn more about the disease. This trial is testing a drug that may slow the progress of the disease.

An observational study to assess the efficacy and safety of Tysabri in MS patients. This drug is an immunotherapy drug that works to reduce disease activity in the central nervous system, and the frequency and severity of relapses in people with MS.

A study evaluating the safety, tolerability and efficacy of a drug for patients with neovascular age-related macular degeneration.

A phase three, randomised, double-blind study of two drugs versus two placebos in the **adjuvant treatment of high-risk BRAF V600 mutation positive melanoma patients**.

A phase three, randomised, double-blind study of two different drugs for the **treatment of metastatic prostate cancer**.

A phase three randomised, double-blind, multi-centre study comparing a number of drugs versus a placaebo in **patients with relapsed and/or refractory multiple myeloma**.

A phase three randomised, double-blind, placebo controlled study of an adjuvant therapy in **patients with surgically resected, cutaneous BRAF-mutant melamona, who are at high risk of recurrence**.

A multi-centre, randomised study to evaluate patient preference of subcutaneous administration of rituximab, versus intravenous administration in **patients with non-hodgkins lymphoma**.

A study to evaluate the efficacy and safety of a therapy for **patients with moderate to severe Crohn's disease**.

A number of different randomised, placebo controlled, double blind studies into the efficacy and safety of a variety of different drugs for **patients with mild to moderate Alzheimer's disease**.

A phase three, randomised, double blind, placebo controlled, parallel group study to evaluate the efficacy and safety of lumacafter in combination with ivacaftor in **patients aged 12 and older with CFTR mutation of cystic fibrosis**.

A randomised phase three trial of drugs for **metastatic non-squamous non-small cell lung cancer**.

A randomised, double-blind, multiple dose, placebo controlled study to evaluate the safety, tolerability and efficacy of a drug in **patients with moderate to severe ulcerative colitis**.

A phase three trial to compare the safety and efficacy of two drugs plus an aromatase inhibitor versus a different combination of drugs as first-line therapy in **post-menopausal subjects with hormone receptor positive**.

A phase three, randomised, double blind, placebo controlled study evaluating the efficacy and safety of a drug on **patients with active class three or four lupus nephritis**.

A phase three randomised, double-blind, placebo controlled study for **patients with acute ischemic stroke**.

A phase three randomised, double-blind, placebo controlled study to assess the efficacy and safety of a drug in the treatment of secondary hyperparathyroidism in **patients with chronic kidney disease on hemodialysis**.

A randomised, double-blind, placebo controlled dose-ranging study to evaluate dupilumab in **patients with moderate to severe uncontrolled asthma**.

A randomised, double-blind, placebo controlled chonic dosing, parallel group, multi-centre study to assess the efficacy and safety of a number of drugs in **patients with moderate to very severe chronic obstructive pulmonary disease**.

A randomised, multi-centre, placebo controlled, parallel group study to determine the **effects of treatment on atherosclerotic disease burden, measured by intravascular ultrasound in patients undergoing coronary catherisation**.

A two year study of efficacy and safety of an intravenous drug versus a placebo in **patients with idiopathic membranous nephropathy**.

Neoadjuvant chemotherapy with a drug in **women with HER2-negative, high-risk breast cancer**.

A phase two, randomised, double-blind study comparing drug treatment to placebo treatment in second or third line **patients with pleural or peritoneal malignant mesothelioma that is unable to be removed**.

A randomised controlled study sequential segmental **treatment of emphysema with upper lobe predominace**.

A stepped, randomised control trial of health behaviour change intervention provided by dieticians to **improve nutrition in head and neck cancer patients undergoing radiotherapy**.

A study to evaluate the control of chemotherapy induced nausea and vomiting in **non-Hodgkin lymphoma patients receiving R-CHOP**.

These and many other wonderful research projects, clinical trials and scientific equipment purchases are only possible because you, and other generous donors like you, contributed to the Royal Adelaide Hospital Research Fund. To honour your commitment, the RAH Research Fund works hard to ensure that the money donated is used to support the hospital and its patients where it is most needed.

We thank each and every one of our donors who has fundraised, donated or taken part in one of our events over the last year. It is only with your help and support that we can continue to fund our projects for the benefit of patients at the RAH.

Federal and State Government funding provides essential health services but it cannot pay for everything. The Research Fund's role is to fill the gap, to provide those extras that will help patients get access to the finest health care possible and to support research and hospital staff with the opportunities that extra research funding can deliver.

Equipment wish list

To keep the Royal Adelaide Hospital and its research arms at the cutting edge of research, a few improvements to the equipment in their research labs would enhance the ability to find new solutions, treatments and therapies.

If ties, coffee mugs, chocolates or flowers just don't seem like enough and you are looking for a more meaningful way to celebrate an occasion you could consider giving a gift from the equipment wish list. You can choose a specific item of equipment, or put your gift towards any of the equipment needs.

Your purchase and donation of any of the following equipment would make a huge impact in allowing research to move forward and assist our researchers to achieve their goals.

COUNTESS AUTOMATED CELL COUNTER

A quick and accurate measure of cell count and viability is of vital importance in cellular therapies where certain cell numbers are required for transplantation.

This cell counter is designed to measure cell count and viability (live, dead, and total cells) accurately and precisely.

The cell counter helps eliminate subjectivity, minimises human error inherent in manual counting and provides results in less than 30 seconds.

Cost: $6,630

FLUOSTAR OMEGA PLATE READER

Required for an ongoing project in the cancer therapeutics lab, who are developing promising new anticancer drugs that kill cancer cells at very low doses.

We are generating additional chemical derivatives of these lead compounds and the Fluostar Omega is required to enable high throughput testing.

This instrument will help determine the most effective compounds.

Cost: $47,000

MACSQUANT CELL ANALYSER

This cell analyser enables very sensitive detection and analysis of leukaemia cells in blood.

This cell analyser will allow the molecular signalling laboratory to very sensitively determine the ability of new anti-cancer agents to reduce both total leukaemic burden, and most importantly, eradicate the low abundance, but highly chemotherapeutic-resistant leukaemia initiating cells that are often responsible for patient relapse.

Cost: $130,000

FROILABO ULTRA-LOW CHEST FREEZER

A number of commercially-funded studies within the mucositis research group has meant a large number of tissue samples requiring long-term storage (-80ºC).

We are rapidly running out of room in our current freezer and wish to acquire a large chest freezer for storage of the samples.

Cost: $20,000

LEICA ROTARY MICROTOME, ATTACHMENTS & ACCESSORIES

The mucositis research group investigates gut damage caused by anti-cancer treatments. They have a high throughput of tissue samples requiring fine sectioning for staining and analysis.

The lab currently uses a microtome in an adjunct laboratory where many bookings for the equipment result in delays to some of their experiments.

Cost: $32,000

HERAEUS MEGAFUGE 16

The SA Cancer Research Biobank provides a state-wide resource for scientists conducting research into blood cell cancers and disorders. The Biobank collects blood and bone marrow specimens from consenting patients from the four major public hospitals in SA, including the Royal Adelaide Hospital.

The specimens are processed and stored within a dedicated laboratory located on the RAH campus, for release to researchers investigating the causes, progression and treatment outcomes of cancer.

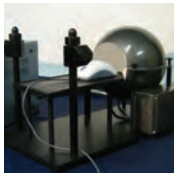
A centrifuge is required to separate the blood cell components from liquid components. This equipment will benefit a large number of biomedical researchers on campus and facilitate a wide range of research projects in cancer.

Cost: $12,000

LIQUID NITROGEN VESSEL

The long term cryogenic storage of blood and bone marrow cells at the SA Cancer Research Biobank.

Cost: $50,000



ELECTRORETINOGRAM RECORDING APPARATUS PLUS ANIMAL GANZFELD LIGHT STIMULATION CHAMBER

Used by the SA Institute of Ophthalmology at the RAH to assess electrical output of the retina as a measurement of ocular function.

Vision researchers use the equipment to determine functional level of vision in eyes of normal and experimentally blind animal subjects.

Cost: $30,000

REAL-TIME PCR DETECTION SYSTEM

This PCR machine is used by Ophthalmologists to amplify DNA sequences and investigate gene expression changes in diseases that lead to blindness.

Cost: $35,000

MICROCENTRIFUGE

To concentrate and separate ocular tissue and cell extracts.

Used by basic science and clinical vision researchers to assess molecular mechanisms of blinding diseases.

Cost: $7,000

UV PCR CABINET

Provides a clean environment to prevent contamination when performing ocular gene expression analysis.

Cost: $4,000

LEICA BIOSYSTEMS CRYOSTAT

A cryostat is used by researchers in the Clinical Centre for Experimental Therapeutics (renal unit) lab to cut tissue sections for microscopic analysis. This allows researchers to investigate patient and research samples providing insight into disease processes and measuring treatment outcomes.

This cryostat is state of the art and has added safety features for installing and removing the blade.

Approx Cost: $65,000-70,000

FISHERBIOTEC LABCULTURE BIOSAFETY CABINET

This cabinet provides a clean and sterile environment allowing the culture of many different cell types.

It also protects the researcher from hazardous material being manipulated in the cabinet. It is a critical piece of equipment with a high daily usage rate within the research laboratory.

Cost: $10,800

DAKO OMNIS AUTOMATED STAINING SYSTEM

The gastroenterology research laboratory investigates gastrointestinal cancer, particularly in bowel cancer and malignancies of the oesophagus, pancreas and stomach.

The research conducted by his group concentrates particularly on early detection and improvement in treatment of bowel cancer which is the second most common cause of cancer-related death in Australia.

The DAKO Omnis enables automation that ensures a faster turnaround time and delivers consistent quality and optimal results. It delivers a high throughput, including the possibility of overnight runs, plus full traceability of patient cases through onboard and workstation software.

Cost: $180,000

TISSUE-TEK VACUUM INFILTRATION PROCESSOR

The improved Tissue-Tek offers the gastroenterology research laboratory a more reliable and simplified operation.

This equipment provides more efficient processing using a redesigned control panel for easy monitoring of the system status and has several preventive functions to protect against unexpected situations.

Approx Cost: $49,000

LEICA LASER MICRODISSECTION SYSTEM

The Leica laser microdissection system delivers contact and contamination-free dissection and specimen collection simply by gravity.

The system guides a laser beam via optics for the highest cutting speed and precision of the laser.

Cost: $364,552

SLIDE PRINTER

Research staff at the Adelaide centre for spine research, spinal cord injury research and orthopaedics and trauma research will use this equipment to automatically print labels onto histology slides.

The printer will greatly improve the throughput of the histology laboratory, enabling scientists and research assistants to spend valuable time on other research activities.

Cost: $10,000

DIGITAL CAMERA AND FLUORESCENT LIGHT SOURCE FOR MICROSCOPE

Polarized light and fluorescence microscopy are used to investigate microstructural changes in cartilage tissues, intervertebral discs and tendons which are caused by disease and injury.

Researchers at Adelaide centre for spine research, spinal cord injury research, and orthopaedics and trauma research need to upgrade existing equipment with this item.

This microscope upgrade will enhance and accelerate current studies seeking to understand the association between scoliosis and structural changes in the intervertebral disc and interactions between sutures and tendon fibres in failed rotator cuff repairs.

Cost: $30,000

PERIPHERAL QUANTITATIVE COMPUTED TOMOGRAPHY SYSTEM

Osteoporosis is a condition of decreased bone mass and bone quality which affects over one million people in Australia and places them at high risk of fracture from minor trauma.

Spinal cord injured patients and those with limited mobility are at particular risk of bone disease. This system is a low-radiation and non-invasive method for accurately quantifying changes in bone and muscle quality.

Researchers will use this to measure bone and muscle quality and geometry in adults and children for longitudinal studies of the effects of disease, disability and treatments on bone and muscle health.

Cost: $130,000

MICROMECHANICAL TESTER

Mechanical testing machines are used to characterise the mechanical behaviour of biological tissues, to help researchers understand the disease p rocesses and injury mechanisms affecting the musculoskeletal system.

Diseases and injuries of the musculoskeletal system can significantly impact an individual's quality of life. Understanding the mechanical function of tissues is vital to improving prevention and treatment strategies.

Cost: $200,000

HIGH CAPACITY LOAD CELL

Bones and other tissues of the musculoskeletal system are typically fractured in impact events that occur quickly and with high forces.

Determining the tolerance of bones and other tissues leads to improvements in the design of injury prevention devices (e.g. airbags in cars).

This equipment will allow researchers at the Adelaide centre for spine research, spinal cord injury research, and orthopaedics and trauma research to measure forces and torques resulting in fracture at realistic impact speeds for injury biomechanics research.

Cost: $20,000

BENCH TOP CENTRIFUGE

In addition to high speed spinning capabilities, this centrifuge features a built-in refrigerator that allows temperature adjustment between – 9˚C to 40˚C.

The ability to spin blood samples at low temperatures with this equipment is crucial as it helps preserve cell and particle integrity in some sensitive procedures.

The myelodysplastic syndrome research group is currently involved projects including mutational screening, gene expression studies and a comprehensive assessment of elderly patients in clinics.

Cost: $20,000

MICROCENTRIFUGE

A microcentrifuge is different from the usual bench top centrifuge as it allows small amount of samples to be spun at high speeds. The cooling capability is crucial as it maintains sample integrity and protects sensitive samples from heat degeneration.

The myelodysplastic syndrome research group will use this equipment to help gain a better understanding of myelodysplastic syndrome, and improve clinical outcomes by developing better therapies for the disease

Centrifugation of small samples is important for many biological applications, such as pelleting nucleic acids for downstream application such as gene sequencing, or isolating proteins from solutions for electrophoresis.

Cost: $3,500

TOUCH THERMAL CYCLER

A thermal cycler is a powerful piece of equipment that the myelodysplastic syndrome research group will use for inpolymerase chain reactions; a process of amplifying small DNA fragments for downstream applications such as sequencing, cloning, gene expression and mutational analysis.

The thermal cycler has a gradient temperature control that allows the user to quickly identify optimal temperatures by testing a range of temperatures at once, instead of performing multiple single runs, thereby saving time and energy.

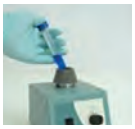
Cost: $10,000

GEL ELECTROPHORESIS APPARATUS

Gel electrophoresis is the process of separating particles contained within a gel via three-dimensional electric field. Particles that are commonly separated by this process include DNA and proteins previously extracted from cells.

The results will be stained with special dyes to allow visualisation of separated material. This process is extremely important as it allows DNA and proteins to be visualised. Gel electrophoresis are by far the quickest way to visualise DNA and the most common method of visualising proteins, which is why it is an integral item for the myelodysplastic syndrome research laboratory.

Cost: $3,000



VORTEX MIXER

A vortex mixer is used for thorough mixing of cells in solutions for biochemical experiments. It mixes material at high speeds of up 2700 RPM.

The myelodysplastic syndrome research laboratory will use this equipment for cell culture and microbial experiments.

Cost: $350

TUBE ROLLER MIXER

The roller mixer operates between 10-60 rpm, which is an ideal speed for mixing blood samples, viscous substances and liquid-solid suspensions where minimal aeration is required.

In addition to sample mixing, the roller mixer can also be used in aiding the de-frosting of frozen samples for the MDS research lab.

Cost: $1,500

ILLUMINA HISEQ

Used by both research and diagnostic groups at the Australian Cancer Research Foundation (ACRF) genomics facility to uncover disease causing mutations, and detect cancer that leads to personalised therapy for cancer patients.

This sequencing equipment is capable of sequencing whole genomes, exomes and transcriptomes.

Cost: $750,000

ILLUMINA NEXTSEQ

Sequencing equipment that is capable of sequencing whole genomes, exomes and transcriptomes.

The equipment performs smaller scale experiments than the HiSeq and is used by researchers in the ACRF genomics lab to uncover disease causing mutations, and actually detect cancer, leading to personalised therapy for cancer.

Cost: $250,000

ILLUMINA NEOPREP

Automates sample (DNA and RNA) preparation for Illumina sequencing

The equipment will be used to prepare cancer samples for the sequencers above to uncover disease causing mutations.

The same preparation is currently performed manually which is labour intensive and slow.

Cost: $100,000

PERKIN ELMER LABCHIP GX

Any research group that performs RNA or DNA extractions from cancer samples will use this equipment for gel separation of nucleic acids and important sample quality control.

Cost: $55,000

FLUIDIGM FC1 CYCLER

Used by research groups to assess gene expression, genotyping or produce amplicons for sequencing from cancer samples.

Cost: $50,000

FLUIDIGM RX IFC CONTROLLER

Used by research and diagnostic groups at the ACRF genomics facility to assess gene expression from cancer samples.

Cost: $30,000

ROBOSEP CELL SEPARATOR

Used by researchers to study biologic and genetic properties of different cell types, which is particularly useful in cancer studies where tumour cells are mixed with normal cells that can mask their genomic abnormalities and growth characteristics.

The equipment allows purification of different cell types.

Cost: $84,000

Your purchase and donation of any of the listed equipment would make a huge impact in allowing research to move forward.

Assist our researchers to achieve their goals

Health Services Charitable Gifts Board

The Health Services Charitable Gifts Board (HSCGB) was formed on July 1, 2011, with the commencement of the Health Services Charitable Gifts Act, 2011, (HSCGB Act).

The Health Services Charitable Gifts Board replaced the former Commissioners of Charitable Funds.

In South Australia the Health Services Charitable Gifts Act 2011 provides for the administration of gifts to public health entities and repeals the Public Charities Funds Act 1935.

All donations made to the RAH Research Fund are vested with the HSCGB (in accordance with the HSCGB Act 2011) on behalf of the Hospital and the Hanson Institute.

When donations are made to the RAH Research Fund, we issue a tax deductible receipt to the donor (if the donation is $2 or above). If it is made clear that the donation is intended to be used for a particular area of research, or if there is a particular purpose tied to the donation, then this is recorded and adhered to.

There is a rigorous process in place that must be followed in order for researchers to gain access to the funds held by the HSCGB. Researchers apply to access funds and must provide full details of how the funds are to be used. There are also strict criteria that must be met before any funds are released for research.

Why it is important to keep donating

Why is philanthropy so important for medical research?

Philanthropy supplements government funding for medical research. Every day, South Australians all over the state benefit from the fund-raising efforts of the Royal Adelaide Hospital Research Fund.

Your donations are often used to support research that is new, or at too early a stage to attract large government or commercial funding. Importantly, your donations are also used to encourage young scientists to pursue their research.

No matter whether your donation is large or small, it all adds up, and with the growth in demand for our health services the need for your support has never been greater.

Our donors include local residents, small businesses, large corporations, trusts, foundations and individual philanthropists – to every single one of you we say, thank you.

Every donation, no matter how small, has the potential to save lives and to help in the fight to solve some of our most pressing health problems. Our donor's gifts are an investment in a healthier future – your future, and the future of all those who will come after you.

Australians have one of the highest life expectancies in the world, but there is still a human and financial cost of disease:

- **Prostate cancer –** kills 8 Australian men every day.
- **Arthritis –** costs Australia $24 billion a year.
- **Breast cancer –** affects 1 in 11 women before the age of 75.
- **Diabetes –** over 270 people develop it every day.
- **Osteoporosis –** affects 1 in 2 older Australian women, and 1 in 3 men.
- **Cancer –** can develop at any age, but around 70% of all cancers are diagnosed in people aged 60 and over.

The hope for an end to cancer begins with research. In 2009, the risk for Australian women of being diagnosed with cancer before their 85th birthday was 1 in 3.

The most common diagnoses were

- **breast –** 1 in 8 females,
- **bowel –** 1 in 15,
- **lung –** 1 in 22, and
- **skin –** 1 in 23.

In 2009, the risk for Australian men of being diagnosed with cancer before their 85th birthday was 1 in 2.

The most common diagnoses were

- **prostate –** 1 in 5 males,
- **bowel –** 1 in 10,
- **lung –** 1 in 13, and
- **skin –** 1 in 14.

In 2010, cancer accounted for about 3 of every 10 deaths registered in Australia.

At the end of 2007, there were 774,674 people (381,164 males and 393,510 females) diagnosed with cancer in the previous 26 years who were still alive.

Prostate cancer
kills 8 Australian men every day

Arthritis
costs Australia $24 billion a year

Breast cancer
affects 1 in 11 women before the age of 75

Diabetes
over 270 people develop it every day

Osteoporosis
affects 1 in 2 older Australian women, and 1 in 3 men

Cancer
around 70% of people diagnosed are aged 60 and over

Of the four areas that we fund, our survey responders felt the order of importance to be:

39.3%
Funding medical researchers

25%
Translating research into clinical practice

18.4%
Purchase of equipment to aid research

17.3%
Funding clinical trials

Feedback survey results

During the year the Research Fund sent out survey forms to a portion of our donors. We wanted to gain a better understanding of your reasons for contributing to medical research, plus find any areas of concern you may have, or any particular areas that you wanted us to focus on.

We received over 450 replies, which was a great result, thank you to all those that took the time to fill out the survey and return it to us.

The good news is that the vast majority of our donors are very happy with what we provide to them. As a result of the findings we are focusing our efforts on providing more detail on where your donations go, what equipment is funded and what research is being supported with the funds you donate.

We also learnt that the majority of our donors are happy with the frequency of our communication with them.

Of the four areas that we fund, our survey responders felt the order of importance to be:

1. Funding medical researchers (39.3%)
2. Translating research into clinical practice (25%)
3. Purchase of equipment to aid research (18.4%)
4. Funding clinical trials (17.3%)

Our donors are a very generous group, the surveys showed that a significant proportion of them have done volunteer work in the past, or are currently volunteering their time.

Thank you

A heartfelt thank you goes to our very generous community of donors who continue to donate funds to support medical research at the Royal Adelaide Hospital and its research arms.

Despite an increasingly challenging environment where donors are choosing very carefully where they commit their charity dollar, the Research Fund still remains the charity of choice for many individuals. We are very appreciative of the generous support we receive throughout the year from individuals, families, community groups and organisations, businesses, trusts and foundations.

Our wonderfully generous donor community support medical research by sending in donations, leaving a donation in their will, buying tickets to our movie events, or taking part in community events that support the Royal Adelaide Hospital. Other people choose to make a donation as a way of saying 'thank-you' for the care received while in hospital.

We would like to thank every single person and organisation that has made a donation during 2013/14. Each dollar we receive makes a huge difference to the research, equipment and training we are able to fund at the hospital.

Thank you to our individual donors

Our hospital, its patients, their families, and the South Australian community depend on our research scientists finding cures, or better treatments for a range of diseases. They couldn't do that without the amazing support of our donors.

The RAH Research Fund is extremely grateful for the support we receive from each and every person that makes a donation, no matter what size.

One person can make a huge difference, and during the 2013/14 financial year we received many generous donations from individuals doing their part to make a difference to the health and well-being of others, both now and in the future.

We'd like to thank the following generous supporters for their contribution, along with the hundreds of others not mentioned here, who support us.

Ali Sahu-Khan
Laurence Tattersall
Rob & Joan Thompson
Silvester Jurkowski
Condola Crossing
Teresa Lugg
Helen Williams
Penny Iosifidis &
Daniel De Angelis
Rob & Sandra Haese
Anita Wymer
Rob & Lib Sanders
Ahrens Pty Ltd
Eljay Homes
Aileen Hatchard
Rosemary MacKrell
Arthur Parks
Solveiga Milics
Miss BL Jones
Carolyne Fraser
Alison Kinsman
Ivor Bowden
Barbara Parsons
Frank England &
Margaret Ludwick
Brian Bereton
Dr & Mrs John & Josie Hails
Catherine Hodge
Josephine Zerk
CJ & MB Turnbull
Gunter & Margit Kulow
Colin & Shirley Spencer
Graham & Joan Iles
Con Kanaris
Ray & Lorraine Healey
Des & Jenny Tailby
Nelda Hossack
Dr Christopher Griffin
Camille Domaille
Elizabeth McMillan
Kevin Kay
E Plumridge
Lesley Trevelion
Isabel Featherstone
Stephen Ingman

During the 2013/14 financial year we received many generous donations from individuals doing their part to make a difference.

One person can make a huge difference

144

people make regular donations

336

donors who are either RAH staff or SA Pathology staff

Thank you to our regular donors

Regular givers (donors) are very important to us. Knowing that there is regular income coming from monthly direct debits gives the RAH Research Fund confidence in determining our future income.

This year we had 144 people make regular donations. Plus we also had 336 donors who are either RAH staff or SA Pathology staff; these generous individuals all regularly donate a portion of their wage to the RAH Research Fund.

The Research Fund would like to thank all of you – both new supporters and those of you who have supported us over many years. We'd also like to thank those of you who chose to increase your monthly donation for the next financial year.

Thank you to our past patients

The care provided by the hospital has led to many grateful patients and their families donating funds for medical research.

We would like to say 'thanks' for all the donations received from people who express their gratitude this way.

Thank you to our celebratory donors

In-celebration donations are often given instead of birthday presents, engagement or wedding presents, or to celebrate other events. People choose to make a charitable donation rather than buy a gift.

People make a donation to the Research Fund as their way of celebrating a significant event. To these people, and those celebrating their significant day, we say Thank You.

(For a list of donors see page 21)

Thank you to our memorial donors

Donating to the RAH Research Fund in memory of a person who has passed away is a wonderful way to honour them and their memory. Many people donate instead of giving flowers at funerals, or choose to donate on the anniversary of a cherished persons passing.

To all those people, the RAH Research Fund is grateful for their thoughtfulness and generosity, and we thank them for the memoriam donations they made in the 2013/14 financial year.

(For a list of donors see page 19)

Bequests

By leaving a bequest in your Will to the Royal Adelaide Hospital Research Fund you can leave a legacy of hope for future generations. You can take action in the fight against heart disease, or bowel cancer, or dementia, or any area of research that you are passionate about. You can help medical researchers transform their ideas into life-saving treatments.

Please be assured that bequests are always used in accordance with a donor's wishes – to support research, to fund technical equipment projects, to allow continued investment in clinical trials, or to support the RAH's patients, their families and staff.

Bequests are always appreciated by the Research Fund and each year provide a substantial amount of funding that is invested into various areas of research work. This year was no different; in 2013/14 bequests were received from 26 estates, amounting to a total commitment for medical research of $1,494,948. To the families of those people who have taken this generous step, we sincerely thank you.

Sometimes a person leaves a bequest, and the Research Fund is unaware of their intentions. We would like to be able to acknowledge and thank people for their generosity and thoughtfulness before they pass away. Please contact us if you have made – or are contemplating making – this generous gesture so we can thank you personally.

If you are considering a bequest, we encourage you to contact the Fundraising Manager or our Bequest Officer on 08 8222 5281 to discuss your plans.

Mary Overton Bequest – Ida Mary Overton died August 28, 2002. A generous donor to the arts and medical research during her lifetime, Mrs Overton bequeathed a portion of her estate to the Royal Adelaide Hospital Research Fund. Her bequest finances research grants.

The RM Roberts bequest benefits research into rheumatology.

The Cliff bequest is used for the benefit and comfort of patients receiving treatment in the renal unit.

The Jane Page Fund provides for research and education in neurology and neurosciences.

The George Southgate Medical Research Trust funds a three year PhD scholarship. George Edward Southgate died on January 6, 2010 and left a portion of his estate for the purpose of establishing the George Southgate Medical Research Trust.

The Ray and Shirl Norman Cancer Research Trust is to be used at the RAH for the purpose of the prevention and cure of cancer. Currently two projects are funded.

Bequests are always appreciated by the Research Fund and each year provide a substantial amount of funding that is invested into various areas of research work.

This year bequests were received from 26 estates, a total commitment of $1,494,948

Millicent Cancer Support group
(Back) Marlene McRostie, Ann Marie Goode
(Front) Karla Werchon, Josie Werchon

Brian's Fun Day

Paddocks Quilters: Ellen, Sheila, Lee, Sarah, Cheryl, Pat J, Pat H, Norma, Tina Glenis, Faye
Seated: Jenny & Pauline

Fundraisers

Special thanks go to the many individuals, groups and corporations who generously give resources, time and money by holding community fundraising events on behalf of the RAH Research Fund.

Collectively, they have raised more than $60,676 towards medical research this year.

We are grateful for your support and commitment to providing the best possible treatment and care for the South Australian community.

PADDOCKS QUILTERS are an extremely talented group of ladies who raffle off one of their quilts every year. All funds raised go to cancer research at the Hanson Institute. Their creative skills have raised over $3,700 to date.

The group currently has 19 ladies, who meet socially and to quilt. The group make quilts to sell for donations, quilts for nursing homes and also raffle a quilt for the proceeds to benefit cancer research at the Hanson.

JEAN DOBIE lost her husband, Brian, to pancreatic cancer. In memory of Brian, Jean now raises funds for research into pancreatic cancer. In just four years Jean's efforts have raised $13,006.

Primarily funds are raised at Brian's Fun Day, an annual event held on the last Sunday of November. Encouragingly November is pancreatic cancer month, plus Brian's birthday. The event includes activities such as pass the parcel for kids, and an adults only version, an egg and spoon race, charity auctions, raffles, games and a sausage sizzle.

Riverland Living To Beat Cancer Group

Jean has also raised extra funds by hosting a barbecues and also a market at Bunnings. Last year she also held a successful 'Ladies night' at George street footwear.

THE MILLICENT CANCER SUPPORT GROUP raise funds in their local community by holding many different events including raffles and a bi-annual girls night in. Recent events include a Father's day fundraiser in September and a Mother's Day walk.

This group are very committed to their fundraising, their first donation from a fundraising event was in 1987, since then the group has raised nearly $78,000.

RIVERLAND LIVING TO BEAT CANCER GROUP's fundraising campaign began in 2001 after founding members Kerry and Cindy's families were touched by cancer. Kerry lost her mother and father to cancer and Cindy lost her dad.

The group want to make a difference for future cancer patients and their families. They investigated various ways to support cancer research and after meeting with the RAH Research Fund, Associate Professor Lisa Butler and Professor Wayne Tilley the group decided to raise funds specifically for cancer research at the Hanson Institute.

The results of that meeting and the group's fundraising activities have been an outstanding success! With support from the local region, the Riverland group has held many different fundraising events.

Events included

- auction dinners,
- Winkie wine and food,
- Fathers day walk
- Ballet and Dance by Rosie Clark Dance Studio, and
- three local football club's 'purple night' held in memory of Jan Langdon who died of bowel cancer.

Gerri and Andrew Bailey

The support that the group has generated from local business, sporting clubs and families is overwhelming, enabling them to raise over $227,000 in a short time. So far the group has purchased equipment including a Leica Microtome, a – 70 degree Freezer, a centrifuge and other smaller items for the laboratory.

ANDREW AND GERRI BAILEY are raising funds for the work of Professor Martin Oehler's at the RAH. Unfortunately Gerri has been diagnosed with cancer and wants her fundraising to be her way to help others.

Gerri believes that it's so important to give something back to the community, and fundraising for Prof Oehlers work is her way to support future generations.

Gerri has a medical background and has seen a lot, but says when you are the person diagnosed, it certainly makes a difference. Her background helps her understand what Prof Oehler is trying to do, she believes he's an amazing person with a strong passion to investigate ovarian cancer. Gerri wants to do all she can to support that passion.

Prof Oehler is looking for a way to detect early-stage ovarian cancer in order to improve patient survival. There are no specific symptoms for ovarian cancer, which means a large proportion of women are diagnosed when they are in the late-stage of the disease. More than 80% of patients are diagnosed at this stage, and their five year survival rate is only 35%. In contrast, the five year survival for patients with stage one ovarian cancer exceeds 90%, and most patients are cured.

Gerri and her husband Andrew have raised over $5,500 by holding two sausage sizzles: one was at Thorndon Park Reserve in Campbelltown, where they sold sausages to friends, family and the public. The other sausage sizzle was at the Tea Tree Gully Golf Club where Gerri is a member.


'Diana' Movie Premiere


'Diana' Movie Premiere


Faith Hope Charity Ball


Faith Hope Charity Ball

RAH Research Fund Golf Day


RAH Research Fund Golf Day


RAH Research Fund Golf Day


Strolling Tones


Strolling Tones


Strolling Tones

Special Events

The RAH Research Fund hosts a number of events during the year, plus offers support to others who hold events and donate their profits to the Research Fund.

Special events are an important way to raise money; they are also a great way to meet our community of donors.

Faith Hope Charity Ball

Mary Tarzia was diagnosed with breast cancer in 2004. After recovering from the shock of the diagnosis, she decided to do something to help others also diagnosed with breast cancer.

Forming her own event – Faith Hope Charity in 2004 – she organised a small gathering of family and friends in her backyard. Now, celebrating 10 years in remission and 10 years of fundraising, the Faith Hope Charity event has grown to become a major annual celebration that raises funds for breast cancer research.

Mary says that many people have told her that there must be a cure found for breast cancer, she agrees and wholeheartedly believes that research is critical to finding a cure.

Since 2004, Mary has raised in excess of $504,000 for breast cancer research and breast cancer patient amenities; an enormous accomplishment for one person. The annual ball has seen Mary fund a number of initiatives including:

- A real time PCR machine – which is used by the breast cancer research group
- Creation of a part-time breast care nurse position at the RAH women's health centre.
- A vein assessment instrument with an infra-red light which pinpoints locations of veins, useful in chemotherapy sessions.
- A tattoo device that assists surgeons completing breast reconstruction by tattooing the reconstructed nipple and areola.
- Paxsman cold caps for the RAH cancer day centre, making the RAH the first public hospital in Australia to use these devices.

Mary's other dream is to build a holiday retreat at Stansbury on the Yorke Peninsula for families.

The 2013 ball raised $98,991 to aid breast cancer initiatives at the RAH and Hanson Institute. Plus $10,000 was donated by Dr James Katsaros to kick start the Stansbury breast cancer retreat.

The 2014 ball, a tenth anniversary celebration, will be held on November 8 at the Adelaide Convention Centre.

Thank you Mary, for all your fundraising efforts over the last ten years, we look forward to seeing what you can achieve in the next ten years.

CanDance for a Cure

Rachel Adcroft lost her husband David to cancer five years ago. She wanted to put together a concert in the hope of raising money to further research into a cure for cancer.

The concert – CanDance for a Cure – is now the premier amateur dance concert in South Australia. Originally held at the Festival Theatre, it has grown to fill the Adelaide Entertainment Centre with over 25 schools taking part.

To its attendees, CanDance is seen as a meaningful way to support cancer research whilst doing something they love.

The 2014 concert, held at the Adelaide Entertainment Centre, saw over 800 performers, 50 teachers and minders, thousands of parents, friends and families come together to dance and raise funds in memory of David Adcroft.

CanDance has successfully raised a lot of money for cancer research

- $27,280 in 2010
- $30,600 in 2011
- $16,621 in 2012
- $18,003 in 2013
- $10,756 in 2014

We thank Rachel and all who have participated in the concerts for their efforts in raising a total of $103,260 to fund research into cancer.

Strolling Tones

The Strolling Tones is a multi-talented entertainment group who have been instrumental in raising well over $155,000 – all of which has been donated to the Hanson Institute.

The Strolling Tones were conceived by Gloria and Terry Seymour in 2004 as a way to raise money for cancer research.

Terry had prostate cancer and he didn't want to sit back and wait to die. As his disease progressed, Terry and Gloria were determined to raise funds for the Hanson Institute's Centre for Cancer Research. They loved music and had many close friends in amateur theatre, so they gathered their forces and founded the Strolling Tones. Their first performance was at the Barossa Valley Bowls Club.

The group have been entertaining a wide range of people from all walks of life for the last ten years. They perform around the state; in fact, they go wherever they are asked to entertain. By having fun, and providing entertainment, this fantastic group are making a difference to their community and keeping alive the memory of Terry Seymour. Their music ranges from sing-a-long 1940's tunes through to the rock ballads of the 1980's. Their concerts feature hits from ABBA, Elvis, Mamma Cass, Dusty Springfield, Tom Jones, Linda Ronstadt, Queen, the Beatles and the Carpenters (to name but a few).

Playing to groups of 30 or 500, young or more senior in years, the Strolling Tones have entertained at the 2009 Royal Adelaide Hospital Volunteer Luncheon, the Port Pirie 100th Anniversary of High School Education, birthdays, weddings, open days, corporate functions, fashion parades and fetes. They toured a three week show – Wipeout Breast and Prostate Cancer which was wholeheartedly embraced by its country destinations and raised the huge amount of $55,000. The group were also short-listed in the Advertiser 2011, Pride of Australia Medal.

Performances over the last year have included:

- Concert for an alternative clothing group – raising over $770 in donations from the event.
- Raised $1,632 from their performance at a 61st birthday party.
- Entertained at the Vines Retirement Village, with the audience singing along and joining in the entertainment.
- Stumpy's luncheon club at the Morphetville hotel – a happy group who joined in with the dancing.
- Salisbury bowling club – the generous crowd donated $552.
- Entertained at the Modbury Bowling club raising $827 for their efforts.
- Performed for the Lutheran Womens retreat, raising $466.
- Raised over $2,800 at their New Years Eve event for the Tindo Nudist club.
- Performed at the Adelaide Fringe Festival – a sold out event that raised over $3,100.

They've raised $18,203 this financial year to support the research programs undertaken by

Professor Wayne Tilley and Associate Professor Lisa Butler into prostate cancer. We thank the Strolling Tones and Gloria Seymour for their support and generosity.

RAH Research Fund Golf Day

For the last seven years the RAH Research Fund Charity Golf Day has raised in excess of $327,634.

This yearly event enables participants from a wide range of companies to network in a relaxed environment, raising money for a worthy cause. Held at the Mount Osmond Golf Course, the event raised $41,831 in 2013. Players start the day with a hearty breakfast before heading out to play 18 holes. After the golf is over, participants are treated to lunch, followed by guest speakers and a raffle with many amazing prizes on offer.

The first golf day in 2007 raised funds to fit out the patient lounge area in the radiation oncology unit. The guest speaker was Professor Dorothy Keefe who gave an overview about prostate cancer. 2008 also raised funds for the radiation oncology unit and featured Alicia Molik as their guest speaker.

2009 saw 92 players teeing off at Mount Osmond Golf Club. Funds again went to the radiation oncology area and guest speaker Michael Angelakis, from the family owned company Angelakis Bros regaled the guests with entertaining stories.

2010's golf day had Craig Jurisevic as guest speaker. A surgeon based at the RAH, Craig has written a book on the Balkan war and his time volunteering with the international medical corps in that conflict. This golf day raised $41,000 to fund a prostate cancer research study and an ICU study into better ways to treat patients who develop blood infections.

2011's game raised $54,106 and featured guest speaker Andrew Pearce, an emergency medicine consultant at the RAH. Andrew, a reservist with the RAAF, spoke on his work overseas including his deployment to Banda Aceh and his work during the Kangaroo Island bushfires.

The golf day in 2012 raised money for the RAH's intensive care unit and saw $59,137 raised. Guest speaker this year was Ben Darsow, one of Australia's newer comedians.

2014's competition will be held on Friday 17 October at the Mt Osmond Golf Course.

Fitzy's Five

David 'Fitzy' Fitzsimons was a phenomenal athlete specialising in long-distance running. He participated in state, national and international competitions throughout the 1960s and 1970s. Diagnosed with non-Hodgkins lymphoma, Fitzy sadly passed away at the age of 58 in 2008.

In honour of Fitzy, a recreational fun run/walk was conceived in 2010. Consisting of a scenic five kilometre loop around inner city Adelaide, the event passes iconic scenery including the River Torrens, Adelaide Oval, and the North Adelaide Parklands.

Fitzy's Five is committed to raising awareness and funding to support vital cancer research at the Hanson Institute. A percentage of each entry goes directly to the Royal Adelaide Hospital Research Fund. This year's event raised $5,891.

'Diana' Movie Premiere

October 2013 saw the RAH Research Fund invite donors from around Adelaide to a special screening of the new movie – Diana.

The movie, starring Naomi Watts and Naveen Andrews, followed the last two years of Princess Diana's life. It told the bittersweet story of her relationship with heart surgeon Dr Hasnat Khan, the last man to truly capture her heart.

The Research Fund was able to raise $6,690 for our cancer research programmes with profits from the evening.

Event Sponsors and Supporters

Our sincere thanks go to the generous sponsors who support RAH Research Fund events. The proceeds from our events are higher because of the generous sponsorship of many companies in the Adelaide area.

We also have a number of companies that support our fundraising events by donating products and services in order that we can reduce the cost to stage an event. To those organisations we say 'thank you'.

Please support those that have supported us.

Event Supporter – Elbio's

Elbio is a consistent and great supporter of the RAH Research Fund. Its owner, Elbio Perez, has donated thousands of his amazing desserts and cakes for Research Fund functions and events. His delicious food can also be found at the RAH Kiosk.

Located in Graves Street Newton, this patisserie and café make unique handmade cakes, pastries and delicious savouries on the premises. Elbio came to Australia 40 years ago and started in the cake making business two years later. An innovative man, he's patented his own special cake wrapping that is now used Australia wide. His delicious cakes and pastries are available at cafes all over Adelaide and Melbourne.

Thank you Elbio, we appreciate your continued generosity and support.

Sponsors

We extend our most sincere thanks to the following sponsors:

Tarkett
McMahon Services
Verifire
Ontera
Australian Carpet & Tile Company
Flair
Access Datacom
KA & LA Pridham Builders
Sublime Plumbing
Watson Fitzgerald & Associates
Angas Travel
Dorma
Magill Motorbodies
Chapel Funerals
Figli Di Martedi
Concrete and Constructions
Romaldi Constructions
Kennedy & Co
Sign-A-Rama Norwood
Hair Machine
Charlesworth Nuts
Arbonne
Koochi
NuSkin's Sylvia & Michelle Holzapfel
Skala Bakery
Southern Ocean Lodge
Sealink

Types of Donations

The RAH Research Fund works diligently to ensure that all the donations we receive are allocated to the area they can do the most good. Often donors specify a particular area that they would like to support, in these cases the Research Fund ensures that the projects stipulated by our donor receive their support.

As you will see in the pages of this annual report, we take pride in showcasing your philanthropy as well as its accomplishments. It is because of you that we can all be excited about the year gone by and the years to come.

Thank you to everyone who has donated over the past year, without your contributions, we would not be able to help the hospital in its world-leading research.

General donations

A donation can literally change the course of medicine. Behind every scientific advance, there have been equally transformative philanthropic investments from our community of donors.

We thank each and every one of our generous donor community for making this possible. Our donors share in each of our remarkable achievements, as well as the small miracles that happen in the Hospital every day

Regular donations

Donors wishing to provide ongoing support to ensure the long term success of life-changing medical research projects can become regular donors. Regular donations make a difference to peoples' lives with ongoing donations.

Regular donations can be easily set up on a monthly, quarterly, half-yearly or yearly basis. If you would like to know more please don't hesitate to contact the RAH Research Fund for information, you can call us on 08 8222 5281 or email RAHresearchfund@health.sa.gov.au.

Knowing that there is regular income through monthly direct debits gives the RAH Research Fund confidence in future income and helps us in our decision making about funding research projects in the hospital.

The RAH Research Fund also receives funds from RAH and SA Pathology staff who make regular donations from their wages.

Workplace giving

Workplace giving is a simple and effective way for staff to regularly donate to the Research Fund. It operates under a pre-tax system, which means that those employees who take part receive an automatic tax deduction.

A donation is automatically deducted from an employee's pay and sent to the RAH Research Fund by their employer. It's a great system as employers report greater staff engagement and retention, and the Research Fund receives regular donations.

Matched giving

This is workplace giving, but taken one step further. Employees of a company pick the charity they wish to support, in this case the RAH Research Fund. Employees then make donations and their Employer matches their donations – dollar for dollar.

It's a great way for people and companies to make donations, and it has the added benefit of building community and business partnerships, plus building employee morale.

In-Celebration giving

This is a very popular way of making a donation to charity. It also adds more meaning to special days and events.

In-celebration donations usually involve the event organiser, or the birthday person, or the engaged couple, asking guests to make a charitable donation rather than buy a gift.

In-Memory giving

Every year many generous families make in-memory donations as a tribute to their loved one.

People often do this by asking friends and family to make a donation instead of flowers at the time of the funeral.

Some simply make a donation of their own, and others choose to remember that someone special by making a donation on the anniversary of their death, their birthday, at Christmas or at another special time.

Contact the Royal Adelaide Hospital Research Fund on 08 8222 5281, or email RAHresearchfund@health.sa.gov.au and we will provide you with personalised donation envelopes that you can use.

Bequests

We are grateful for all gifts received from estates, and for those who have informed us of their decision to include a gift in their Will.

A valid Will is the one way to ensure your wishes are honoured after your passing. It is an important document that states precisely what you wish to happen and can provide for family, friends or any group you wish to support.

Our bequests income this year was $1,494,947 from 26 estates. These funds will help to ensure we can continue to fund innovative medical research projects today and into the future.

Bequests can be made in different ways, you can choose to bequeath a:

- residual gift – which is a share, or the whole, of your estate after providing for family and friends.
- percentage of the overall value of your estate – which allows for growth or depletion in the value of your estate.
- specified sum of cash – does not allow for changes in circumstances or inflation.
- real estate, stocks, bonds, shares, artwork, jewellery, etc.

It's easy to include a bequest to the Royal Adelaide Hospital Research Fund. You can either include the bequest when you make out your Will, or simply add one as a codicil to your existing Will. In either case, it is very important that the wording of your Will is clear and precise, so it is best to consult a Solicitor or Trustee Company when putting your wishes into words.

Please note that it is essential that the correct wording is used in a Will to avoid confusion and subsequent legal costs.

Thank you Volunteers

RAH volunteers are integral to our work. Volunteers help with fundraising activities and provide essential services to patients, visitors and staff at the Hospital.

We are extremely fortunate to be able to count on these people who offer their time, experience and skills – they are a precious resource.

Volunteers are also critical to the Research Fund's activities. We are grateful to Marjorie and Maureen who give up their time every week to help us with a myriad of different jobs; all done enthusiastically and with their special brand of humour and expertise.

Volunteers are the quiet achievers and many people are unaware of the sheer volume and scale of their efforts to help patients and their families within the hospital. Our volunteers tackle anything asked of them.

The RAH Research Fund would like to express our appreciation for all who volunteer, who give their commitment, show compassion, offer a kind word, a listening ear, an honest compliment or just the smallest act of caring for someone.

We recognise that it only takes one volunteer to make a difference in a patient's life or the lives of their family. We are fortunate to have so many volunteers who touch the lives of so many. It is because of their caring, hard work and dedication that we say – Thank You!

Lavender Lads and Ladies

The amazingly generous people who volunteer as a Lavender Lad or Lady at the RAH come from all walks of life. They contribute in many different ways and are highly valued and appreciated for the positive difference they make to the daily running of the hospital.

The volunteer profile has changed a little over the years, but the tradition of providing help and support for patients and their families continues. Previously members of the Lavenders were mostly drawn from those who were retired, these days our current volunteers represent all ages, cultures and countries.

Volunteers provide help for patients, particularly those from the country who do not have a support network in Adelaide. They act as guides to help people navigate the hospital, provide practical assistance for patients including a newspaper and magazine service, care for flowers, provide emergency clothing when required and assist with the distribution of lunch and afternoon tea to outpatients undergoing chemotherapy.

To all our Lavender Lads and Ladies, we say – thank you!

Message from the Volunteers Manager – Chris Iovino

The volunteer service, along with the rest of the hospital, is undergoing changes in readiness for the move to the new RAH. One of the key areas of change is that the volunteers will expand their services from the wards of the hospital to supporting outpatient clinics and day areas.

This is already being trialled in an oncology suite and the orthopaedic outpatient clinic with great success. Volunteers in these two areas are tasked with making patients comfortable and providing valuable assistance to the rest of the unit, especially at mealtimes. Importantly the roles of the volunteers are continuing in their service capacity without encroaching on a paid person's area of work.

Our volunteer numbers have grown this year, with 72 new members joining us in the last 12 months. This brings our total number to 200 wonderfully generous people who volunteer their time to help the Hospital. Our volunteers are a wonderful cross section drawn from our multi-cultural society, of all ages and differing experiences.

It is inspiring to work alongside these unique individuals and I relish every moment. Thank you to all our volunteers for making my job so much more enjoyable and the hospital a more friendly environment.

Profile volunteer – Margaret Nelson

Margaret Nelson has been a Lavender Lady for more than 12 years.

Originally volunteering her services for three days a week, she now supports the Hospital five days a week.

This year Margaret has been awarded Life Membership to the Lavenders, an honour bestowed on the very deserving and dedicated. Donating over 8,000 hours of her time in just the last six months, Margaret is dedicated to the welfare of our patients.

Volunteer Opportunities

If you would like to volunteer your time for the hospital please contact

Chris Iovino
Volunteer Manager
Phone: 08 8222 4637
Email: Chris.Iovino@health.sa.gov.au

Auxiliary Volunteers

Established in 1925 and formally occupying the current home of the RAH Research Fund, the Kiosk caters for thousands of hospital staff, patients and visitors each year.

Located right next to the main entrance, the RAH Kiosk is staffed by volunteers (and some paid staff) and aims to encourage healthier eating habits with a range of delicious and nutritious snacks and meals that are kind to waistlines. Volunteers provide many of the Kiosk services; preparing food, serving customers, restocking shelves, clearing tables and generally making a visit to the Kiosk a positive one.

People volunteer at the Kiosk for many different reasons. They may wish to become actively involved in giving back to the community, develop new skills, make use of their time and talents, develop their language skills, take part in preliminary hospitality training or just because it makes them feel good. Whatever the reason, volunteers make such a difference, and we are grateful for their time and effort.

Royal Adelaide Hospital Kiosk volunteers are also the driving force behind much needed fundraising. The Kiosk donates its proceeds back to the hospital and enables the purchase of patient comforts, improved equipment and a social work service.

We appreciate the time and devotion of all the Auxiliary volunteers, and would like to take this opportunity to say thank you for all that they do.

Message from the President – Debbie Brown

The RAH Auxiliary has been donating profits from the Kiosk to the hospital since February 1925. Over this time we have donated $10,366,552.

Last year turnover in the Kiosk reached $2 million dollars, this year we reached just over $1,944,800. This allows the RAH Auxiliary to continue their support of the hospital by donating the profits from the Kiosk's day to day trading to the RAH to enable them to purchase specialised equipment. This year the RAH Auxiliary also provided just over $26,000 towards the RAH Social Work department for assistance to patients and their families.

I'd like to take this opportunity on behalf of the Auxiliary's Executive Committee to provide our heartfelt thanks to all the wonderful people who volunteer their time at the Kiosk. I like to believe that "we don't volunteer because we have nothing better to do – we volunteer because IT IS the better thing to do."

Message from the Manager – Bea Logothetis

The RAH Kiosk volunteers are a pleasure to work alongside. I admire their work ethos and dedication; they make a huge contribution every day, seven days a week, to the smooth running of the Kiosk.

Our volunteers come from a diverse range of cultures and age groups; but what they all have in common is the desire to contribute their particular expertise. Thanks to them the Kiosk is able to offer a great range of tasty food to the many visitors, families and staff who use our services.

The exceptional people who volunteer every day bring a new element to the running of the Kiosk, an element of friendship and purpose to a very busy area.

Volunteers provide their time and skills willingly, donating their time means we are able to donate the proceeds from the Kiosk to the Hospital.

Volunteer Profile – Dorothy Divito

Kiosk volunteer Dorothy Divito was recently awarded a life membership medal for special and outstanding service.

Joining the Kiosk as a volunteer in 1980, Dorothy originally volunteered in the Kiosk when it was located in the Sheridan Building – now occupied by the RAH Research Fund.

Dorothy volunteered on Fridays, doing everything – she says she remembers that in those days they sold cigarettes!

Dorothy moved from volunteering to become a part time worker, filling in when others went on holidays, she then became the Assistant Kiosk Manager, and then moved up to the role of Kiosk Manager. However after 14 years paid work, Dorothy resigned her role as Manager and became a volunteer again.

Dorothy loves coming into the Kiosk, she relishes feeling useful and has made many friendships over her time as an auxiliary volunteer.

Volunteer Opportunities

If you would like to volunteer your time for the kiosk auxiliary please contact

Bea Logothetis
RAH Kiosk Manager
Phone: 08 8222 4880
Email: Belinda.Logothetis@health.sa.gov.au

I like to believe that we don't volunteer because we have nothing better to do...

we volunteer because IT IS the better thing to do

Latest research

It is an undeniable fact – research saves lives!

The aim of medical research is to find better treatments, new methods of prevention, and cures for conditions that plague our community.

However, medical research takes time and money. The acquisition of special equipment, time consuming tests and trials, and endless hours of data collection and painstaking documentation all need to occur before a new procedure, treatment or cure can be used for patients.

Research is costly in the short term but it does pay off with the long term benefits of better health and medical care.

The RAH Research Fund plays an important role in funding research that otherwise may have remained just an idea in someone's notebook. Donors and their generous donations do not replace funds provided by our taxes; donated monies benefit patients through the funding of research, equipment and facilities that would not otherwise be provided. Donations also enable researchers to test novel ideas often derived from their experience as clinicians.

It is only through your support that remarkable new discoveries can be made.

Profile research

The life-changing medical research funded by donors of the RAH Research Fund has an impact on healthcare for the community now and into the future.

When you support medical research programs at the RAH, the Hanson Institute and the Centre for Cancer Biology you are helping build the future of medicine, advancing medical knowledge and ultimately improving patient care and outcomes.

We have more than 400 scientists working on cancer, infectious diseases and other complex conditions. These dedicated people are making a difference by producing research that finds new ways to treat medical conditions, new drugs that can provide an improved quality of life, and sometimes even a cure.

Question:
How can we further research into brain disease?

Outcome from research:

The SA Brain Bank's facility provides critical resources for researchers.

Nature of research:

The South Australian Brain Bank was started in 1986 and receives brains from people who wish to leave them for research.

Once the organ arrives at the Bank it is processed in order to determine exactly which underlying disease caused death. Jim Manavis, Scientific Manager of the Brain Bank says "We need to get the diagnosis exactly right. Sometimes the pathology isn't clear cut, as you may have compounding pathology."

"With the brain, the pathology for most neurodegenerative disease states is bilaterally distributed – it's the same on both sides usually; although the brain of a Multiple Sclerosis sufferer is different. We divide the brain in half. One side is used to make an accurate diagnosis, the other half is supplied to medical researchers."

"The SA Brain Bank has a scientific board that examines all research applications for brain tissue. The Board ensures that each researcher has complied with human ethics obligations, and all other research requirements before making tissue available to the researcher."

The Bank holds tissue from many different cohorts – different ages, sexes, and disease states. Each organ is catalogued and entered into a database under a number. There is no identifying personal information, just the clinical history that is supplied by the consulting neurologist.

"When we supply tissue to a researcher, we have an accurate and thorough diagnosis; what the individual's symptoms were, what medication they were on, and for many cases we even have the radiology." Mr Manavis says "We can supply the researcher with a complete health picture of that brain tissue."

"We supply tissue not only to local researchers, but all over the country, and sometimes to international researchers. Different research has different focuses, and if a researcher wants tissue from a particular region, and no one else locally requires it, then we will supply them," Mr Manavis says "The Brain Bank operates a cost recovery system only; it is not our intention to make a profit, however we do want to cover costs, so we pass on the costs of transport and access only."

Researchers prefer to use human tissue, rather than animals, for this type of research for a number of reasons. "Animal tissue is not ideal as it doesn't cover the full spectrum of pathologies. For instance many conditions affect only humans; conditions such as Alzheimer's, Parkinson's, motor neurone disease, schizophrenia and other mind disorders." Mr Manavis

explains "A lot of the mice we use in research are genetically modified and exhibit only one pathological feature of the spectrum we see in human disease. The human brain is like an orchestra, whereas animal brains may only be the string section. And significantly, human brains are much bigger, researchers can access critical areas more easily."

It's a requirement of obtaining tissue from the Brain Bank that researchers acknowledge the Bank in all publications and presentations. The SA Brain Bank has facilitated research into diseases of the nervous system, dementia, ageing and neurodegenerative diseases. Some of the work published as a result of resources provided by the SA Brain Bank include:

Research into

- Parkinson's disease
- Glaucoma
- Dementia and Lewy bodies
- Multiple Sclerosis
- Neurodegeneration
- Muscular atrophy in amyotrophic lateral sclerosis
- Familial Alzheimer's disease
- Motor neuron disease
- Multiple System Atrophy
- Leukodystrophy
- Familial neuronal intranuclear inclusion disease

Importantly the SA Brain Bank is also providing resources for new genomic studies, and is the supplier for a new study on the different forms of epilepsy and the genetics of epilepsy. This research was able to go ahead due to the generous donation of tissue from donors who suffered from epilepsy.

The SA Brain Bank is also establishing a Research Eye Bank. This material will be able to be sourced by Opthalmologists such as the RAH's Professor Robert Casson who is using optic nerves from the Eye Bank to investigate macular degeneration.

The Brain Bank is also focusing on establishing a separate Brain Tumour Bank, as they believe the genetics of brain tumours is going to become an area of major importance. If tumour tissue is not available it impedes the amount of research that can occur, by establishing a Brain Tumour Bank, research can move forward.

Mr Manavis says "If people want to donate their brains to the Brain Bank, we have a brochure available that provides a lot more information about donating."

The Brain Bank has facilitated research into diseases of the nervous system, dementia, ageing and neurodegenerative diseases.

Question:
Can we find a treatment to slow the onset of Alzheimer's disease?

Outcome from research:

Earlier trials have revealed results that show a slowing in the progression of disease.

Nature of research:

You have a unique brain. Even if you're an identical twin, you are still unique, with your own life story, your own past and present – your own identity, your own memories.

This is what those suffering from memory loss are frightened of losing – your memory defines everything about you, it is who you are.

For many suffering from memory loss, it's a terrible time for them and their loved ones. Carers often feel they have lost the person they are caring for. They no longer share memories with them – it's the same sense of loss as if the person had died.

Yet society doesn't recognise this, it doesn't recognise the feelings of bereavement, and the huge space left in your life when someone you love, and who you shared decades of your life with, no longer recognises you.

Forgetfulness can be a part of getting older. As we age we can lose brain cells and the connections between them, so we think slower, messages take longer to interpret and action and it's harder to pay attention.

Memory loss can happen at any age. However, significant memory loss could be a sign of early Alzheimer's.

Dementia is not a normal process of ageing, it is a fatal disease for which there is no cure. Up to 75,000 people have, or are dying of dementia in South Australia. Dementia is a collection of symptoms that are caused by different disorders affecting the brain – it is not one specific disease. Each week 1,700 new cases of dementia are diagnosed in Australia, that's about one person every six minutes.

Alzheimer's disease (AD) is a form of dementia and affects one in four Australians over 80. A degeneration of the brain's nerve cells in Alzheimer's is associated with microscopic findings of beta amyloid plaques and neurofibrillary tangles. New research has found that beta amyloid accumulates in the brain about 10 – 15 years prior to the onset of dementia, and that research suggests that we are treating AD too late. Treatments need to focus on the earliest stage (the prodromal stage), when patients present with memory impairment only. Increasingly younger people are being diagnosed with AD, some as young as 30.

For thousands of South Australians dementia is a frightening, lonely reality. A reality for people like Pam Lloyd, who is facing a future with a disease for which there is no cure; a future that will alter her quality of life and place an enormous emotional strain on her and her family.

Growing old without fear should be a right for all people. Royal Adelaide Hospital's Memory Trials Centre is participating in an international effort to try and find a potential disease modifying treatment for AD. An injection that could transform millions of lives by tackling Alzheimer's in its early stages is being tested on South Australians.

Pam Lloyd, recently diagnosed with memory impairment, (possibly the early symptoms of the prodromal phase of Alzheimer's disease), is taking part in this trial. She says, "Everyone knows that there isn't a cure. My father had dementia and deteriorated very quickly, it was terrible to watch."

"I saw Dr Jane Hecker from the Memory Trials Centre who knew about the trial and thought I'd be a good candidate." Pam is excited to take part, she explains, "If there's something that can, or may help me, I'll certainly put my hand up for it. I knew that if it was at the RAH that it would be very professionally run."

The RAH's Memory Trials Centre is an enthusiastic and committed group of experts who are part of an international research effort trying to solve the dementia puzzle.

Kathy Robinson, one of the centre's clinical nurses says "There's a need for research to work on better ways to rule out other causes of memory decline. Gantenerumab has the potential to change lives. It's a new, experimental, injectable treatment that assists in the early stages of AD, aiming to slow the progression to dementia."

The Gantenerumab trial is targeting patients with Prodromal AD; they have mild cognitive impairment but are able to function normally. Kathy says "The trial will look at the effect that Gantenerumab has on participant's ability to remember information, solve problems and go about their day-to-day activities."

Dr Jane Hecker, a Geriatrician with a special interest in memory disorders says, "Gantenerumab is an antibody that binds to all forms of aggregated beta amyloid and helps remove the sticky plaques as they form in the brain, it is not expected to be a cure. If we can catch disease before significant damage has occurred we may be able to really help patients, they could live normally for longer and delay experiencing the more severe symptoms of the disease."

Pam Lloyd explains why she signed up for the trial, "It seemed that there was nothing we could do, there's no active treatment for early stage Alzheimer's disease. So it would be very easy for people to be left to their own devices, to be sent away as they can't be helped."

"But they're great at the RAH, they really care for you and monitor you very carefully. I really enjoy coming in and the way I get treated during my visits. I feel important when I come here, and it's nice to know that there are caring people who want to know what is going on in people's brains with dementia, and who are actively looking for a cure or better treatment."

Pam's husband and carer Ross says "The trial also monitors Pam's memory with regular testing. I believe it's one of the most important parts of the trial as it helps us to understand any changes. The care, professionalism and support from the Memory Trials Centre is invaluable and makes me feel that I am not alone in supporting Pam."

Pam says, "Taking part in the trial is stopping me from getting depressed, it's invaluable. Who knows, by the end of the trial, they may say that this medication works. And when it's available I can start using it."

The Memory Trials Centre is also participating in a trial based on a study by Adelaide trained Doctor Wischik. He believes that a protein called tau – which forms twisted fibres, known as tangles inside the brain cells of AD patients – is largely responsible for driving Alzheimer's.

Earlier small trials using patients with mild and moderate AD revealed a 90% reduction in the rate of disease progression over two years. These results are very promising and it's hoped that ongoing larger trials will show similar benefits.

Growing old without fear should be a right for all people.

Question:
Can fish oil improve the efficacy of anti-rheumatic drugs?

Outcome from research:

High doses of fish oil could be beneficial combined with anti-rheumatic drugs.

Nature of research:

Recent studies carried out at the Royal Adelaide Hospital are looking at the effect of taking high-doses of fish oil with conventional anti-rheumatic medication in patients diagnosed with recent-onset rheumatoid arthritis.

The beneficial effects of fish oil in rheumatoid arthritis are well documented, but the question of whether fish oil has additional benefits in suppressing the disease process in early rheumatoid arthritis have not been looked at yet.

Associate Professor Susanna Proudman, from the Rheumatology Unit at Royal Adelaide Hospital conducted the first clinical trial to examine the effects of high versus low dose fish oil in patients with recent-onset rheumatoid arthritis combined with disease-modifying anti-rheumatic drugs (DMARDs).

The trial found that the rate of success of the anti-rheumatic drugs was boosted when the patient also took a high-dose of fish oil daily.

Success of the anti-rheumatic drugs was boosted when the patient also took a high-dose of fish oil daily.

"Patients also achieved remission faster when taking a high dose of fish oil, compared with a control group given a lower dose" A/Prof Susanna Proudman says.

She explains "140 patients took part in the clinical trial. These patients all had rheumatoid arthritis of less than a year's duration, and were being treated with best-practice therapy".

After one year, initial DMARD therapy had failed in just 10.5% of patients taking high-doses of fish oil, compared with 32% of those taking a low-dose of fish oil.

"Omega-3 fatty acids (fish oil is rich in these acids) have previously been reported to improve rheumatoid arthritis symptoms, but earlier trials had not reflected the use of the oil in combination with DMARDs." A/Prof Proudman said.

"In addition to symptomatic benefits, the use of fish oil can improve success rates of therapy and a reduced need for drug therapy. It is safe and has additional benefits for patients with rheumatoid arthritis, including reduced cardiovascular risk."

A/Prof Proudman said that to make the high dose of fish oil more tolerable for patients, they took it with a small amount of orange juice. "Patients were advised to swallow it in one gulp on an empty stomach and to wash it down with a small glass of orange juice before consuming a solid meal, preferably at the end of the day. This strategy minimises the time the oil spends floating in the stomach and, hence, repeating of the fishy taste."

Question:
What is the quality of life like for patients after discharge from ICU?

Outcome from research:

Better information for doctors and better outcomes for patients.

Nature of research:

"Compared to 15 years ago, we have much better outcomes in the ICU now, plus patients are going home rather than going to another hospital, or care facility." Dr Maiden continues "That's one of the big concerns we have in ICU. We might be saving lives, but are we saving lives that end up chronically debilitated and dependant on care in a nursing home."

"We need to look more closely at what is happening to our patients a year or two after leaving ICU, so we contact our patients and ask a number of standardised questions to find out how they are doing."

Dr Maiden says "It's very enlightening to see what is happening to these people after they've left hospital. Some are completely incapacitated, but some are back running their own business again, and everything in between."

"It's vital information. We would like to be able to better predict these long term outcomes." He says "We can't just measure survival; we need to know what we are doing to our patients in the long term. Are we helping them or are we harming them down the track? If they had their time again would they go through the same therapies they were provided, or not."

We need to look more closely at what is happening to our patients a year or two after leaving ICU.

To illustrate the importance of predicting outcomes the ICU team recently ran a study that looked at elderly patients who have suffered a head injury.

"Patients over 65 who have fallen, hit their head and had a brain haemorrhage and ended up in ICU were examined." Dr Maiden says "We presumed that a lot of those patients would do poorly even if they had neurosurgery for the haemorrhage. The study was conducted with 350 elderly patients who were followed up for two years after their admission to hospital. What we found was that a third of the patients died in hospital. After a year, another third of the patients had passed away, but of the remaining third – half were living independently, the other half were incapacitated and required nursing home care."

"We know that the outcome from any sort of brain injury or disease is significantly impacted by age. Your recovery is much better when you are younger; after about 50 to 60, the ability for your brain to recover significantly deteriorates."

"So the really important message is – don't get a head injury." Dr Maiden says "We believe that it's so much better to spend time, money, resources and effort in preventing those over 65 from having a head injury in the first place."

"Many falls are low falls – less than a metre; people falling down a stair or falling off a footstool while changing a light bulb. Because many of these people are often on blood thinners it makes any haemorrhage in the brain a lot worse. We would like to reduce the risk of falls and the compounding problems.'

Question:
How can we use genetic abnormalities to better treat and monitor disease?

Outcome from research:

Sequencing is important for the provision of personalised medicine.

Nature of research:

All disease processes have a genetic component, which is either inherited or acquired by somatic (non-inherited) mutation during cell division.

Identifying genes and mutations that can predispose families to disease (or cause disease) is important diagnostically, but more importantly it provides targets and pathways for therapeutic intervention.

Head of the Molecular Pathology Research Laboratory, Professor Hamish Scott, says "Our research takes advantage of existing and emerging technologies and resources. We are interested in how and why genetic mutations occur, how these changes cause disease or disease predisposition, and ways of better treating and monitoring these diseases."

"We also work on rare diseases and genetic diagnosis for families. Rare genetic diseases and the predisposition to leukaemia and lymphoma can provide insights into the initiation and progression of these diseases. We collect samples from families with these predispositions in order to determine which genes are mutated to cause these disease predispositions. Identifying these genes has an immediate and direct implication for the families and individuals affected, and it's beneficial for counselling, family planning and choices of therapy."

The Molecular Pathology Research Laboratory is also at the forefront of the latest in sequencing. The lab provides genome sequencing – where every piece of DNA is sequenced. They also provide exome sequencing – where they sequence just the DNA that is understood.

Professor Scott says "We recently did an exome sequence for a young boy and were able to pinpoint what was wrong with him and change his treatment. He's actually got a little better, so this sequencing is an important part of providing more personalised medicine."

"The research and equipment we have is state of the art; it's very much about moving people onto a personalised medicine regime. Drugs are often chosen to treat a particular tumour by where that tumour is located in the body, rather than what the cancer's genetic mutation is. For instance, Herceptin, which is used for HER2 positive breast cancer is a very effective drug. However, HER2 positive tumours also occur outside the breast area, but those tumours are not always tested to see if they are HER2 positive, and whether Herceptin is permitted to be used as a treatment. I believe that the way forward is to look at a cancer's genetic makeup and then treat it for its genetics, not its location in the body."

Professor Scott also works on families who are predisposed to developing cancers. "I recently found a couple of different genes that predispose them, which means I can monitor patients a lot more closely. In these families there are a lot of children getting acute leukaemia and dying at very early ages. With the new analysis these children can now be identified. We know what the effective treatment is too – they urgently need a bone marrow transplant to increase their chance of survival."

"An Adelaide family I've been working with has 13 cases of acute myeloid leukaemia reported. In fact, with some families – literally the whole family can end up with leukaemia – because one person comes in for a diagnosis and we start testing the rest of the family to see who can be a donor, and you find out there's bad news for the whole family. There has now been hundreds of patients with this gene identified throughout the world, and a lot of the samples get sent here for diagnosis."

Professor Scott has found that "Our discoveries imply that what were previously regarded as predominantly sporadic diseases can in fact be due to inherited mutations in a small proportion of affected patients. Genetic testing will identify mutation carriers who would benefit from clinical screening and testing – sparing those who do not carry the mutation from unnecessary investigations."

Question:
Can we find new strategies for patients with highly aggressive breast cancer?

Outcome from research:

Research may provide new opportunities to retard blood vessel development in tumours.

Nature of research:

A major focus of the Vascular Biology and Cell Trafficking Laboratory is to investigate blood vasculature in normal and disease states, and better define blood vessel progenitor cells for clinical application.

Blood vessels contribute to life threatening diseases such as cancer and heart disease, but are also essential for tissue regeneration and wound repair. A better understanding of blood vessels in disease will provide new treatment options for many debilitating diseases and may lead to therapies that block blood vessel development in cancer patients.

We know that there is a strong link between blood vessels associated with melanoma and breast cancer growth. Associate Professor Claudine Bonder, head of the Vascular Biology and Cell Trafficking Laboratory at the Centre for Cancer Biology says "Breast cancer cells form blood vessel structures on their own. They don't need the endothelial cells which naturally form blood vessels within our body. This growth is also called vasculargenic mimicry, because the cancer cells mimic blood vessel cells."

We are trying to identify whether this growth factor that cancer cells use to form blood vessels is involved in the relapse.

Together with Professor Angel Lopez, the Co-director of the Centre for Cancer Biology, the laboratory is looking at growth factors which control breast cancer development in the same way that they are looking at melanoma development.

"We have identified that a breast cancer tumour will grow to a certain size, and then a specific growth factor controls not only how the cells grow, but also how they begin to mimic vascular structures." Associate Professor Bonder continues "What we are trying to identify is whether this particular growth factor that cancer cells use to form blood vessels is involved in the relapse and may be controlling cancer progression in patients who aren't responsive to the current treatment regime."

The laboratory's research should lead to the development of new strategies and treatment options for patients with breast cancer who currently don't have good treatment options and for those patients who have a highly aggressive breast cancer with poor prognosis and need rapid, effective treatment.

A/Prof Bonder says "There's a particular gene profile that we've identified in breast cancer cells that is almost identical to normal blood vessel cells. It may be that in certain situations, where breast cancer has grown and now needs new vessels to progress further, that the microenvironment is forcing changes in the DNA and at the gene level to allow for this vasculargenic mimicry to occur."

Different treatment strategies are available, however they're not applicable to everyone, some people don't respond to certain treatments, so alternatives need to be found.

Question:
How can we better treat patients with Scleroderma?

Outcome from research:

Establishment of an international database to provide insights into the disease.

Nature of research:

Each year many people visit their doctor for relief from back, neck or muscle pain, or swollen and painful joints.

Sometimes these symptoms point to a disease of the joints, muscles and bones. These diseases, commonly called rheumatic diseases, can include: Gout, Osteoarthritis and Rheumatoid Arthritis. There are also rarer conditions including lupus, myositis, vasculitis and scleroderma.

Scleroderma is the focus of a study by a group of international scientists, including those from Royal Adelaide Hospital.

Scleroderma is an autoimmune disease where your immune system starts attacking healthy tissues, including the connective tissues of the body (tissues that hold together joints, muscles, blood vessels and internal organs). The body's response is to stimulate the production of excess collagen. Collagen is important to give connective tissue its strength, but excess collagen causes hardening and tightening of the affected area.

The exact cause of scleroderma is unknown. Genetics, the immune system and environmental factors may play roles in causing this condition; however this has yet to be proved.

Scleroderma affects both sexes, with a female to male ratio of between three and four to one. It can occur at any age although the peak incidence is 40-60 years. There are estimated to be over 5,000 people with scleroderma in Australia.

There are two main types of scleroderma:

- **Limited scleroderma**, which affects the skin and sometimes the tissues beneath it (for example, muscle). This can lead to stiffness and difficulties moving the joints in the affected areas.
- **Diffuse scleroderma** affects connective skin more widely about the body.

Both types can affect other organs including blood vessels, joints, the digestive system and occasionally the lungs, heart, kidneys and muscles.

Scleroderma is not a common disease; but can have devastating consequences if complications such as pulmonary arterial hypertension (PAH) occur. PAH is a disease of the blood vessels in the lungs, it affects about 10% of patients.

Headed by Royal Adelaide Hospital's Associate Professor Susanna Proudman, the Australian Scleroderma Interest Group (ASIG) is a nation-wide network established by rheumatologists. ASIG is researching systemic sclerosis and screening patients with PAH and other lung problems. The Royal Adelaide Hospital has the second highest proportion of patients (200 people) involved in the study.

In November 2012, ASIG members established an international collaboration with researchers from Canada, Spain, Germany and America.

Results from the meeting have included a study of existing patient databases which has provided insights into the similarities, or otherwise, of patients with the disease around the world.

The meeting also laid the groundwork for the main goal of the collaboration, which is to establish an international inception cohort (INSYNC) where researchers are able to study damage, mortality and more detailed questions about the disease.

ASIG has already developed a new, less costly, and easy to use algorithm for screening patients. The development of a 'Damage Index' using international methodology has successfully obtained funding for a multi-centre randomised clinical trial of a new blood thinning agent for PAH.

The international collaboration brings ASIG to the forefront of international research on systemic sclerosis, particularly as ASIG is leading the work on the Damage Index.

Pooling resources on an international basis will give scientists access to more data about the disease, which may result in finding a cure, or better ways to control the disease.

Question:
How effective are clot retrievers?

Outcome from research:

Improved treatments for stroke patients.

Nature of research:

One in six people will suffer a stroke at some stage in their lives. For half of them, it is fatal or profoundly disabling.

Although stroke is commonly thought to affect the elderly, 20% of cases occur in patients under sixty.

Witnessing the impact of stroke on younger working-age patients has inspired Dr Tim Kleinig, the head of the stroke unit at the Royal Adelaide Hospital, to pursue a career in stroke care and research.

Dr Kleinig believes stroke research is at an exciting juncture, and that the busy RAH stroke unit – which sees over 500 patients a year – is ideally suited to help research new treatments.

One of the treatments being investigated is a clot-dissolving drug called 'tPA'. Although tPA has been used since the mid-1990s, Dr Kleinig, together with researchers throughout the country, is trialling the medication with selected people previously thought unlikely to benefit from it.

Although stroke is commonly thought to affect the elderly, 20% of cases occur in patients under sixty.

"Although we know that this medication is effective when given early after stroke, currently we can't administer it to people who present beyond this time or to people who wake up with a stroke, where the onset time is unknown." Dr Kleinig continues "However, with new advanced neuroimaging techniques we think we can distinguish between patients with dead brain, who will not benefit, from patients with threatened brain, who probably will benefit. This new trial is to test this hypothesis."

Another ground breaking trial will examine the effectiveness of clot retrievers for those patients who are ineligible for tPA, or for whom tPA is ineffective.

One patient who appeared to benefit from this treatment in pilot phases, is Darlene McLeod, a 44-year-old mother of three who suffered a severe stroke. Darlene was brought to the RAH unable to speak or move her right side. Clot-dissolvers were ineffective; luckily neurointerventionalists were able to clear her brain artery, leaving her with only a mild speech problem.

Dr Kleinig says, "We have now reached the point where we can reliably clear the arteries when tPA fails. But we don't know for sure if patients are benefitting, or what sort of patient benefits most."

Dr Kleinig believes the time has come for the treatment to be studied in a formal trial. "We have the patients, the facilities and the enthusiastic doctors here at RAH. We just need the generous support from the community to improve the outcome for all stroke sufferers." Dr Kleinig said.

Question:
Why is a form of HRT linked to an increased risk of breast cancer?

Outcome from research:

The potential to reduce breast cancer risk for some HRT users.

Nature of research:

Two hundred years ago only 30% of women lived long enough to reach menopause, today 90% of women reach menopause – usually when they're about 51. 95% of women become menopausal between 45 and 55 years old.

Some women experience unpleasant menopausal symptoms and are prescribed a combined oestrogen plus progestin hormone replacement therapy (HRT). This type of HRT has been linked to an increased breast cancer risk. The progestin component is thought to be responsible. The most commonly used synthetic progestin in Australia is medroxyprogesterone acetate (MPA).

Dr Nicole Moore, based at the Hanson Institute, is investigating why MPA is associated with an increased breast cancer risk. She says "I want to get a better understanding of how MPA works at the cellular level and how it may promote breast cancer."

"We know that MPA acts by binding to protein receptors inside breast cells, but it is not clear which receptors are enabling MPA to promote breast cancer." Dr Moore explains "Our studies suggest that MPA can act via two different receptors to increase breast cancer cell growth. One of these receptors is called the androgen receptor, which normally has a protective effect against breast cancer, but when MPA is present, this protective effect is lost."

"My work has identified a group of genes that are changed by MPA which potentially affect the growth of breast cells," said Dr Moore. "If I can get a better understanding of how MPA works at the molecular level it may provide a rationale for changing prescribing habits and lead to a reduced breast cancer risk for HRT users."

The results of Dr Moore's work will help thousands of women and their doctors make more informed choices about taking combined HRT with MPA. And in the longer term should lead to improved HRT drugs which can relieve menopausal symptoms without carcinogenic side effects.

Get a better understanding of how MPA works at the cellular level and how it may promote breast cancer.

Question:
Why does sepsis cause the body to stop working?

Outcome from research:

Adelaide based research into thyroid hormone replacement therapy has the potential to save millions of lives around the world.

Nature of research:

The Royal Adelaide Hospital is the major adult trauma referral centre for South Australia. Intensive Care Specialist, Dr Matt Maiden, is undertaking a number of studies to improve the recovery of ICU patients with life threatening infections.

'Sepsis' is a life threatening infection. It is caused by a microbial infection of the blood, lungs, brain, urine, skin or as a result of a bowel rupture. The body's immune response to clear the infection can overwhelm the body. In an attempt to fight the infection, body organs can stop working.

Sepsis can affect anybody – young, old, fit, unfit. One of the most lethal conditions in the hospital, sepsis is the most common reason for requiring treatment in an intensive care unit. Dr Maiden explains "If you end up in an Australian intensive care unit as a result of severe infection, the mortality rate is about 20%. This compares very favourably to other parts of the world like Europe and the United States where mortality rates are nearer 50%."

The focus of Dr Maiden's research is examining why this life threatening infection causes the body to stop working. "I want to understand why blood pressure falls, why kidneys stop working, why lungs stop working properly, why patients become drowsy and why cells do not work properly." He explains "If we can work out why this happens, we might be able to find therapies that can help restore organ function."

There are currently several new endeavours at the RAH trying to understand how to improve survival from sepsis. Thyroid hormone replacement in sepsis is an area of Dr Maiden's research. "In sepsis, thyroid hormone levels fall – the more unwell the patient, the lower the thyroid hormone. We also know that the thyroid hormone is essential for normal organ function. Replacing thyroid hormones in very ill patients may be beneficial."

"We weren't sure whether thyroid hormone replacement was the right thing to do or not, and importantly whether it would be safe to give to critically ill patients." Dr Maiden says. "So I've spent the last three years studying this in a pre-clinical model where we use a placebo or thyroid hormones and see what this does." Dr Maiden says "The trial was completed six months ago, and confirmed that replacing the thyroid hormone was safe. I am now analysing all the different bits of tissue to better understand why it is that thyroid hormone levels change during illness."

Dr Maiden is also looking to the future "We really need to test thyroid hormone in a human clinical trial. This is important translational research were we incorporate the results from pre-clinical trials and translate it to the bedside to try and improve patient outcomes."

"Ideally the trial will be conducted as a multi-centre international trial. Testing on a different mix of people is really important. If you do a study in just one hospital it tends to attract a small group of patient types, but if you spread it around different hospitals around the world, you get a greater cross section of patients, diseases and health systems."

The international collaboration is possible due to Dr Maiden presenting his early research findings to one of the world's leading thyroid research groups in the Netherlands. "The group was very excited by the results." Dr Maiden says "What is happening at the RAH has the potential to save lives around the world. Sepsis has a relatively high mortality, so even a small difference can make a big impact."

"However, all the best ideas don't count for anything unless you can find the funds to do the research." Dr Maiden says "We were very fortunate to have the support of a private benefactor who donated via the Royal Adelaide Hospital Research Fund to make the first thyroid study possible."

Question:
How can we slow the progress of cancer in the body?

Outcome from research:

Investigating the role surface proteins play in tumour development.

Nature of research:

Associate Professor Claudine Bonder is the Head of the Vascular Biology Laboratory at the Centre for Cancer Biology on the RAH Campus. She explains "The work in our laboratory is focused on blood vessels and their contribution to health and disease."

"We are constantly mindful of the donations that people make to medical research and that what we do is not possible without those donations." A/Prof Bonder says "Donations help us buy the newest and most advanced equipment, which allows us to work better and make faster progress so that we can develop new treatment options sooner for cancer patients."

Currently working in collaboration with Professor Michael Brown from the Royal Adelaide Hospital, A/Prof Bonder says, "Together with my colleague Dr Lisa Ebert, a Florey Research Fellow (funded by donations) we are focusing on melanoma research and have made some really interesting discoveries in the last 12 months."

"It is very clear that there is a strong link between blood vessels that are associated with melanoma, and patient survival rates." A/Prof Bonder said, "This has also been found to apply to breast cancer, another important research area of our group."

A/Prof Bonder explains why she is concentrating on breast and melanoma cancers "Australia has the highest rate of melanoma in the world, and breast cancer is something that affects almost every family at some point, with one in eight women being diagnosed before the age of 85." She believes "there is a need to target these particular cancers as they're still amongst the greatest contributors to cancer affecting the Australian population."

A/Prof Bonder's team are focusing on surface expressed proteins on melanoma cells and developing new treatment strategies. She explains "There are some patients for whom current treatments are ineffective. We know that cancers progress faster if they have access to the blood supply, as the cancer uses blood vessels to access nutrients to grow, and as a highway through the body to metastasize (spread)."

A/Prof Bonder explains what surface markers are "On a cell you have proteins that are expressed like a finger is projected from your hand. There are thousands of different surface proteins expressed by a cell; they vary from one cell to another which is what makes them different from each other. These surface proteins also help us identify a cancer cell from a normal cell."

"In the last 12 months we have pinpointed surface proteins on a subset of melanoma cells that appear to be contributing to blood vessel development." A/Prof Bonder says, "A tumour can grow to a millimetre cubed before it needs new blood vessels to help it grow. Interestingly, it uses a number of ways to make the blood vessels it needs to access nutrients and oxygen for continued growth. One way is the recruitment of endothelial progenitor cells (EPCs) from bone marrow."

A/Prof Bonder explains "EPCs are bone marrow derived cells that circulate around the body and make an endothelium – a single layer of cells that form the inner lining of blood vessels. They circulate throughout the body healing vessels that need repair. But importantly, these cells can also be used by a tumour. The tumour recruits these cells to make new blood vessels to help it grow and metastasize."

A/Prof Bonder and her team are also investigating other vascular structures in cancer. "A tumour can make its own blood vessels so it doesn't always need EPCs. The tumour cells change in a way that allows them to mimic blood vessels. They'll form what we call a lumen (like a cylinder) which allows blood to flow through which promotes the growth and metastasis of cancer."

A/Prof Bonder goes on to say, "The important finding we have discovered in the last 12

months is that there is one surface protein on these cancer cells which seemingly controls blood vessel formation of the cancer cells. We've discovered that when you reduce the protein level, you change the cancer so that it can't form these vessel structures anymore, which suggests that you won't get growth of the tumour and you won't get metastasis. It is unlikely that it's the only surface protein that is regulating this process, but it is proving to be very important."

"Current treatments available for melanoma and breast cancer are not applicable to everyone, there are a lot of patients who don't respond to these treatments, or do at first and then become unresponsive, so alternatives need to be found." She continues, "We are hoping we can develop new treatments for patients who currently don't have good options. That's why we are trying to identify whether the surface protein that cancer cells use to form blood vessels is involved in relapse and whether it's controlling cancer progression in patients who aren't responsive to current treatments."

A/Prof Bonder says "We are looking at the development of small molecules to inhibit and prevent the function of this surface protein. I hope that within a year we should have a good product that we can use, at least in the laboratory, to target this protein and reduce cancer development."

In an effort to advance their findings A/Prof Bonder and her team are now using human tissue kindly donated by patients. "We are looking at this surface protein in samples from patients who are at different stages of the disease. We want to track where this protein might be playing a role, it might be higher in expression during some stages of the disease compared to other stages."

"Our close collaboration with the Royal Adelaide Hospital is invaluable" A/Prof Bonder says, "We couldn't have access to donated patient samples to test and identify new surface proteins if we didn't have these collaborations with RAH clinicians."

Financial donations to the Royal Adelaide Hospital Research Fund have aided A/Prof Bonder with her research "We have been very fortunate and were able to purchase a flow cytometer which identifies cell surface proteins. This machine allows us to add a fluorescent tag onto an antibody that binds to the surface expressed protein making it possible to identify what type of cell it is."

When an inhibitor is added to the surface protein the blood vessel structures don't form. A/Prof Bonder explains, "It's a simple as that, at the moment we don't completely understand how this is happening, but it's very exciting and is a major project of interest in our laboratory."

Donations have also provided A/Prof Bonder (and other researchers in the Centre for Cancer Biology) with an Incucyte. She says, "This is an amazing piece of equipment; it's a camera that sits inside a tissue culture incubator and amongst other things, can take time lapse photography of the blood vessels that are forming by the cancer cells. This instrument has given us so much more knowledge and understanding than we could have hoped for. For that we are very thankful."

"Donations undoubtedly help to progress our research, but even the simplest things – a fridge or a freezer – make our work faster and easier. Even the smallest donation, amounts that people might think are insignificant, really have a big impact on our day-to-day to work. Again, we thank those donors."

Question:
Did you know that Australia is the melanoma capital of the world?

Outcome from research:

Better pathology testing offers more treatment options.

Nature of research:

We all have memories of our youth. Days of summer spent at the beach, enjoying the sun, getting buried in the sand, and spending hours playing in the surf.

But those simple pleasures can exact a terrible price for some people.

Like most South Australians, Damian spent most of his time at the beach; never giving a thought to the consequences. All those hours in the sun meant he was a prime candidate to develop skin cancer.

30 years later a mole on Damian's shoulder started bleeding. He went to his local GP, not really concerned. He said "I just thought they'd burn it off, but they did a biopsy of the mole".

It turned out to be melanoma – the deadliest form of skin cancer.

Medical research offers the greatest hope, and the Royal Adelaide Hospital and the Centre for Cancer Biology (CCB) are determined to find ways to combat this deadly disease.

Researchers from the Royal Adelaide Hospital and the Centre for Cancer Biology, Professor Hamish Scott and Professor Michael Brown are unwavering in their commitment to find an answer.

Prof Brown, a Royal Adelaide Hospital cancer specialist, says "Most melanoma cancer is curable. If it's confined to the skin, surgeons can usually remove it. It's only when it spreads that the devastating impact of this disease can take hold."

Having lost his mother to breast cancer and with a brother diagnosed with cancer, Damian was worried. He remembers, "I was horrified to find out that I had skin cancer." Following his diagnosis he underwent surgery where his melanoma and a lymph gland were removed. A couple of months later Damian collapsed at work. Unfortunately his cancer had metastasised (spread) and was now in his brain. He underwent an aggressive treatment regime – surgery to have the tumour removed and then a course of intensive radiotherapy treatments.

Damian spent most of his childhood on the beach. He says "Being sunburnt was common, it's only now that I realise just what damage that did."

Melanoma behaves as it does because the genes in the cells have become damaged. Professor Hamish Scott who heads up the Centre for Cancer Biology's Molecular Pathology Laboratory explains "Not all melanomas are the same. By identifying which molecules have mutated in a tumour, patients can receive better treatment based on their specific mutation."

Glad to be back at work after recovering from his brain tumour treatment, Damian's next health challenge started when his leg became sore and then to his dismay, went numb. He began having a great deal of difficulty walking, and remembers, "After what I had already been through, I was really scared. My doctor, Professor Brown, was also concerned, and ordered an MRI scan to see what was going on."

Unfortunately the MRI revealed that Damian's cancer had spread even further; it had moved into his spine and adrenal gland.

Damian underwent more sessions of radiotherapy before being put into a clinical

trial at the Royal Adelaide Hospital. Prof Brown explains "Testing in Professor Scott's Molecular Pathology Lab revealed that Damian's melanoma had a BRAF mutation. This is an abnormal change in a gene that enables melanoma tumours to grow and spread throughout the body."

"I put Damian into a clinical trial testing immunotherapy drugs to try and control his disease. Unfortunately they didn't work. The next option was to try BRAF kinase inhibitor drugs." Prof Brown says "Fortunately medical research has developed drugs that are specifically designed to kill the BRAF mutated cells. I was able to choose drugs that hopefully would get control of Damian's cancer."

"The new drugs are shrinking Damian's disease and he's gradually improving. He has to use a walker – at only 43 – but he is starting to walk better; he can even walk without aid at home."

"It's fantastic, I'm starting to regain my independence, and really looking forward to going back to work." Damian is optimistic, "I was just waiting and hoping that the new drug would kick in and fight the melanoma. When I started to be able to walk again, it encouraged me, it's like the treatment is really starting to work."

The breakthrough new technique that identified Damian's cancer mutation is now standard testing in Adelaide. Prof Scott says "We've improved the way we test tumours. Instead of testing for one mutation at a time, we now test for almost 200 mutations and 5 genes which gives the clinician more treatment options, and hopefully a better outcome for the patient."

"We also have a brand new technique testing somatic mutations (not inherited mutations) and can tell when a tumour is becoming resistant – earlier. We are among world leaders in this area. The test enables us to tell the clinician which new drug they can try to keep a tumour suppressed." Prof Scott continues "This gives patients a better chance, and is a major step forward. We are routinely providing a swathe of options to enable clinicians to do the best for their patients."

"As new drugs are discovered, they're tested in clinical trials to ensure that they will be even more effective and safer than current treatments." Prof Brown adds, "I'm excited about the future – research holds the key to improving survival rates and getting control of many cancers, as it has done with Damian."

Damian's experience is pretty typical, big surgery, and lots of it, then large doses of radiotherapy, then chemotherapy – it's quite an ordeal.

South Australians dying every year from cancer is unacceptable – that can only change with greater investment in research. Prof Brown says "Research leads to clinical trials, which means that we get evidence to make good decisions about approving drugs, and most importantly, about providing the best options for patients."

This is a sentiment echoed by Prof Scott, "More money for medical research means that more people can participate in more trials. And that means better treatment options for more people."

"Better screening of genes means we will be able to identify why someone gets cancer, and why someone else doesn't. Funding will help discover new and improved drugs, and a system that more quickly integrates research into clinical practice."

Medical research is furthering what we know about cancer every single day – discovering better treatments, making the recovery quicker, and the optimism greater.

"It's fantastic, I'm starting to regain my independence, and really looking forward to going back to work."

PERSONAL STORIES

Paul's Story

Medical research increases the survival rates of patients suffering from disease.

Young and fit, Police Officer Paul Zuromski, was looking forward to going overseas as part of his Army Reserve service.

Lying in bed one day, Paul put his hand on his stomach and felt a large, hard lump. Paul says "I wanted someone to tell me what the lump was, if the Army found it in a pre-deployment medical, I worried it would stop me being deployed overseas. I really wanted to serve in the Solomons".

He didn't make it to the doctor that Monday, but on Tuesday (as he expected) his Army medical check found the lump. Sent straight to hospital, Paul underwent every test imaginable – blood tests, PET scans, CT scans, biopsies and more.

In September 2011 Paul got the news that he had a football sized tumour in his abdomen. It was a retroperitoneal liposarcoma; a rare and aggressive form of sarcoma.

Sarcomas are a cancer of the connective tissues (muscle, cartilage, fat or blood vessels). This cancer affects both children and adults and can occur in any part of the body, however about 50% of tumours are found in the limbs. As this is a rare cancer (less than 1% of cancers) obtaining research funds is challenging.

Sarcomas often require complex treatment. The South Australian Sarcoma Team (SArcoma) based at the Royal Adelaide Hospital uses innovative therapies to provide patients with the highest-quality evaluation, treatment and rehabilitation services.

Incredibly fit, Paul had been training to join the elite Water Police and for deployment overseas with the Army Reserve. He had ignored all his symptoms " I thought my tiredness was due to being married with two children under three, Police shift work, serving as an Army Reservist and owning and running my dive business".

Diagnosed in a matter of days, Paul then quickly underwent surgery – a complex five and a half hour operation where his tumour was removed along with his right kidney. The surgery and subsequent radiotherapy proved successful.

Treatment options depend on several factors, including the type and stage of cancer, possible side effects, and the patient's preferences and overall health. The most common treatment options for sarcoma involve a combination of radiotherapy, chemotherapy and surgery.

Patients are seen by a team of doctors who prescribe the best treatment pathway based on latest research. This is a critical component of care – specialists can diagnose and review results more quickly and thoroughly. This type of care results in better overall survival and improved quality of life. Patients may also be offered access to the latest treatments via participation in clinical trials.

Paul believes the efforts of the sarcoma team saved him and he is passionate about his ability to contribute tissue to research studies to help detect, prevent and potentially cure this rare cancer. "I know how important it is that cancer research continues – my wife and I are also fundraising for cancer research".

Paul's fitness and positive outlook have helped his recovery process – having missed out on a summer, he has got back into diving and wants to prove that he's back to normal. His goal – participate in the 2014 Cairns Ironman – a 4k swim, 42k run and 180k bike ride.

Paul's advice is "Don't be a bloke! If you notice anything different in your health – get it checked out now. If you find a lump – take it seriously."

Sharon's Story

"In 2010 the mole on my right foot, that I've had for as long as I can remember, started to change colour and got a bit itchy." Sharon says "I ignored it for a few months, even when people kept telling me to have it looked at. I was sure it wasn't what everyone was thinking it could be. So I put off seeing a doctor."

"Eventually I needed to see my doctor on another matter and decided to show him my mole. He just about did a back flip, he was pretty sure it was melanoma as he'd just lost his father to the disease." She remembers "I still thought – he's probably wrong, cos I don't get sick!"

The Royal Adelaide Hospital is where Sharon was sent for her biopsy. The results came back identifying it as melanoma, grade 4. Sharon says "I was a bit numb – and shocked. My first reaction was one of disbelief. Then I got upset, but the nurses were so lovely and helped me through this."

In 2010 Sharon's mole was removed; the hospital did further tests and found that the melanoma had spread. "So after the surgery, I got the news that it had spread to my lymph nodes. I had to return to hospital three weeks later to have all the lymph nodes in my right groin removed." Sharon says "I was looked after magnificently, the Hospital was wonderful, and the ward doctor referred me to an oncologist who was Professor Brown."

Sharon's appointment with Professor Brown investigated the possibility of her being enrolled in a clinical trial. However due to complications in the lymph node removal, she missed out on qualifying to participate in the trial.

The other option offered to Sharon was Interferon – which is an immune booster and a 12 month treatment. Sharon remembers "Prof Brown offered this drug to me, but let me know that it wasn't proven for melanoma, however it may give me some chance. I thought that it's better to do something than nothing, and if the cancer comes back, at least I know I've done the best I can do."

Sharon underwent scans at regular intervals while on the drug; before the scan in November 2013 she found a lump in her right thigh. "I thought this doesn't feel good. So I went for the scan and hoped for the best, but the following Tuesday I got the phone call to say – sorry it's back."

The scan found three tumours, two in her leg and one in her lung. "That day my world took a bit of a dive. I went to see Prof Brown who told me that the margin taken out of my leg wasn't deep enough, the melanoma had gone into my muscle. Normally with melanoma they need a wide margin around so that it doesn't regrow, they weren't able to do that."

The next scan, six weeks later, showed the tumours in her lung had multiplied and there were now more than 10.

Still working, and at a new job, as her previous employer had gone into liquidation, Sharon went between work and the hospital for scans and radiotherapy treatments. "My work was so good, I would go get my radiotherapy, come back with my patient ID band on, get it cut off and I'd go back to work and make up my time later, so everything was going well."

"However I was having a lot of back pain. I put it down to an uncomfortable bed in hospital, or that I may have just hurt myself, but it was getting worse. I was given some pain relief, but ended up in Modbury hospital in pain, it was just unbearable!"

"It was my spine that was causing the pain". Sent for an MRI to investigate the cause of the

pain, her results were devastating – Sharon now had tumours on her spine. "Tumours had caused a fracture in my spine. So from that time I haven't worked. It just got too hard, I couldn't walk properly for a long while, and I lost a lot of strength in my left side – I couldn't even change gears in my car, so I can't drive now."

Sent for more radiotherapy, Sharon's treatment was fast tracked so that she would be well enough to participate in a new clinical trial. She remembers "There was a two week wash out period after radiotherapy, before I could start the clinical trial. So instead of having five treatments of radiotherapy in five different doses they gave it to me in one hit. I didn't have the time to wait."

"I think I was the last one enrolled in the world for the clinical trial. Before I started the trial I had melanomas coming up that I could actually see. I had a bump on my chest, it was like a bruised lump – I just knew what it was."

"Then another one came up on my arm, I found another one on my left thigh, so it was all starting to happen. Once I started the trial, thanks to Prof Brown for pushing things along, it's been good. The tumours are going."

Sharon remembers "My first result was a 50% reduction 12 weeks into the trial, and then 6 weeks later I was at 55%, my last scan showed a 73% reduction. The tumour in my spine is still there, it will apparently be the hardest to go. One of the docs said, look at the fact that of the more than 10 in your lung, there's only 1 left, and as far as I know the ones in my legs, and the one in my arm's gone."

"I kept feeling my arm" She was thinking "I think its smaller, I think its smaller, and then finally I couldn't find it anymore, so that has gone. So I'm heading in the right direction and I'm pretty determined. I was pretty shattered to start with as the prognosis wasn't good."

Sharon recalls what she was told "I was told that – I can't make you well, I can't cure you – all I can do is prolong your life. I've been told that over and over – its pretty hard to take."

Sharon's inner strength has come to the fore "Once I got my head around the fact that they can only prolong my life I made a conscious decision – that wasn't acceptable for me, I'm going to beat this, because I can!"

She says "I'm just grateful, so very grateful for the clinical trial. And for all the people, Prof Brown is such a science man, but he's obviously amazing at what he does. I have faith in him because when this first happened – I actually struggled a bit. He told me not to take it lightly. Worst case scenario I've got 6 months, best case 2 to 3 years. But I said in 2 to 3 years there could be something developed and then I can try that. Prof Brown agreed – and I said well then there is hope."

"I'm positive I can do it, I have my moments – but I don't have many."

"Since I've been on this trial, they've started another melanoma trial which is apparently working, the results have been very good."

"I don't consider myself sick, and if people ask me, I say I'm on a clinical trial, I don't say that I'm sick, because I don't' feel sick anymore. I still think I'm young enough to have a happy life, and I have an affirmation that I say – I say that I'm healthy and well and my cancer is gone and I'm going to live a happy life for at least another 30 years!"

"Going through the treatment is okay – the scariest thing is the thought of not being here for my kids."

Darren's Story

Medical research is all about saving lives – saving people like Darren Cornell.

Darren is a man whose mantra is positive thinking; he's always up for a challenge. Joining SA Police in 1992, he took part in the gruelling four day STAR Operations pre-selection course in 1999, and joined the elite police squad shortly afterwards. Darren says "STAR Group was a great job; it's the best job in the police service!"

The rigorous STAR selection process recruits those who are able to handle difficult situations, have very good coping mechanisms and can deal with stress. Darren's strengths in those areas helped him win a position in the STAR ranks – it also helped him deal with his next challenge in life.

"I remember September 2007 clearly, I was married with two young children – Bella six months old and Logan who was nearly four. I felt fatigued at work on a number of occasions, plus I didn't pass a physical test – one that I had previously passed easily. I was very embarrassed that I failed, but knew something was wrong – it was like I couldn't get enough oxygen, I couldn't breathe."

After consulting a doctor, Darren's blood test pointed to a serious condition. He says "the doctor gave me a blood test in the morning and was at my home at eight o'clock that evening. He told me to go to hospital straight away as my white cells were through the roof. If I hadn't gone to the doctor he estimated I would have lasted around three weeks. If I wasn't so physical in my job, I wouldn't have picked it up, I just thought I had the flu."

Darren was admitted to the Royal Adelaide Hospital and told he had Acute Myeloid Leukaemia. He was offered two options – one was to be treated as an outpatient with survival odds of 13%, the other option – take part in a clinical trial at the Hospital.

Darren says "Basically my wife and I had about an hour to decide, we chose to go with the clinical trial – with no guarantees. I figured any odds have got to be better than 13%."

He explains "I believe that you can only focus on what is within your control, at that time the decision was to go forward with the clinical trial – it had to be a better option."

Once the decision was made, the first chemotherapy was administered a couple of hours later. Darren says "For the first part of the trial I was in quarantine for 28 days, I wasn't allowed interaction with anyone who had a cough, cold or illness. I wasn't even allowed out of the room as I was at high risk of catching a disease from others. I had Chemo every day for four or five days."

"I had a walking machine and used it every day." Darren explains "I refused to stay in bed; I got dressed every morning and walked on that machine." He believes the mental component is the biggest fight he had to win. "The medical side of things you have no control over, apart from whether you go clinical trial or standard treatment – after that you get no choice. Its how you deal with it mentally that gives you a stronger position."

Part of Darren's method of coping with all that was happening to him (once out of isolation) was to go for a walk. "Getting dressed and walking felt normal and I felt more in control." Darren explains "My way of thinking was – why should my life change, yes I'm in hospital, but I still had the ability do what I wanted to. I was studying a management degree at the time, so I continued to study for my exam and that helped pass the time, as well as giving me something else to focus on."

"I worked it out with the doctors, Doctor Bardy was very good and very, very flexible" says Darren "if I wasn't scheduled for a specific treatment, I would leave my phone number with the nurses and I could walk around. I had the Botanic Gardens, North Terrace, the old buildings, the art gallery, the museum, it kept me focused and I could escape as well."

"I went from daily to weekly bone marrow biopsies, then to monthly, three monthly, six monthly and eventually yearly biopsies." Darren says "In all I had about 23 bone marrow biopsies."

Darren returned to work in May 2008 "It was always my goal from day one; to not only get back to my study, but also to get back to work." He says "My first day at work was one small step to getting back to normal. I believe strongly that there are certain things you can control in this situation, and a number you can't. I focused on getting back to work and finishing my studies and keeping myself busy."

Speaking about his choice of the RAH clinical trial, Darren says "I can't speak highly enough of it, it changed my life, and it saved my life. I feel very lucky and privileged, not only to be offered the opportunity to participate in a clinical trial, but to still be alive."

"I know donations go to medical research and clinical trials – but I'm someone that donations have really helped."

"I've been very lucky with medical treatment and positive thinking, and being focused on what I want to achieve." Darren admits "I have a fantastic network around me of not only friends and family, but work and the Hospital. I feel very fortunate, when things are going bad – that's when you really need help and I was lucky to get it."

Stories like Darren's emphasise the contribution that donating to medical research can have. Researchers and clinicians at the Royal Adelaide Hospital are doing everything they can to find new and better ways to help people like Darren.

Claire's Story

There are many great reasons for living in South Australia, but for Claire, there's a very important one. Having endured no less than three kidney transplants, 33 year old Claire has little doubt that she is alive today thanks to medical research conducted at the Royal Adelaide Hospital.

At the age of 12, not long after she started high school, Claire became ill with a very rare virus. "Unfortunately, I had an autoimmune response to that virus which meant my immune system started to identify my lungs and my kidneys as foreign bodies and attacked them quite ferociously. Unfortunately my kidneys weren't able to recover."

"We'd hoped that some function might come back, or things would improve but eventually, they had to take out my kidneys. So within a couple of years I had my first kidney transplant." Fortunately both of Claire's parents were found to be compatible and her father made the lifesaving donation. For a while things went well but after a few more years her donated kidney began to fail.

Claire's luck changed for the better when she met Professor Toby Coates at the Royal Adelaide Hospital. Professor Coates and his team had been working on a therapy that would help people like Claire. "We're one of only three or four places in the country that practice transplant desensitisation," he explains. "What that means is the removal of antibodies that would otherwise prevent people like Claire from having successful kidney transplants, through a process called plasma exchange."

Claire was fortunate when she needed her second kidney transplant, firstly because her mum was a compatible donor, but most importantly, that Prof Coates and his team at RAH had developed their plasma filtration process which would increase the chance that her body would accept the transplant.

"Essentially, when we identify someone who has a high level antibody that is going to stop them accepting a kidney transplant, they come into the Royal Adelaide and we perform a plasma exchange. This is very effective at lowering levels of antibodies which makes a kidney transplant become compatible."

At the time they were preparing for Claire's second transplant, her future husband Paul, was tested and found to be a compatible donor. Prof Coates remembers saying at the time, 'Paul you would make a great backup for the future', never expecting that it might be necessary.

Claire's second kidney transplant gave her the opportunity to enjoy a full and active life until things took a turn for the worse about 18 months ago. "I'd gone back to university, got a degree in archaeology and became a consultant archaeologist, life was going really great," she recalls. "Then unfortunately, a few bad things happened and I ended up needing dialysis again."

Our kidneys play a very important role in filtering toxins from our bodies, and when they fail or are under great stress, dialysis does that job for them. But it's a highly intrusive, exhaustive and debilitating process, which for Claire meant attending a dialysis clinic for four hours at a time, three times a week.

Prof Coates and his team had been working hard on improving the plasma exchange process. They were invited to participate in the clinical trial which would give Claire her life back.

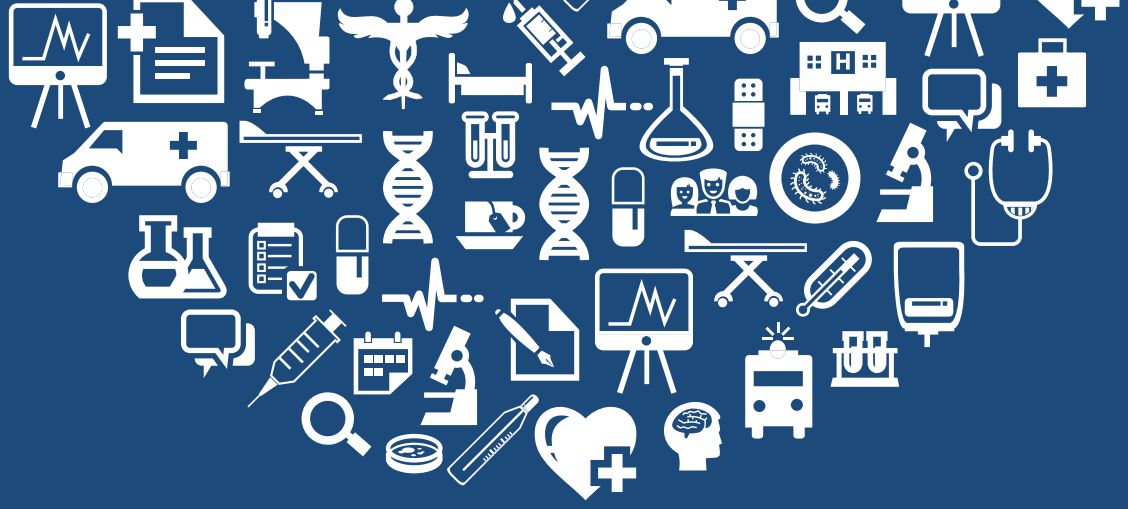
One of only two research institutes in Australia invited to participate in the trial of the new drug, Prof Coates explains, "Because we have this expertise and are internationally recognised for our work in the area, we were invited to become involved. The new drug blocks the antibodies binding that result in transplant rejection. We're probably one of the top four centres around the world with experience in using this drug and plasma exchange in this particular situation for organ transplantation."

Millions of people around the world are affected by kidney disease, tragically only a relatively small proportion have access to the world's best practice quality of care and procedures available at the RAH. "What's important about Royal Adelaide is that we have the ability to do this desensitisation. You wouldn't be able to get access to it in any other place in Australia. So we've been able to transplant people who otherwise wouldn't be able to get transplants," says Prof Coates.

It was a case of third time lucky for Claire, with her husband Paul as the donor; Claire received her kidney transplant in December 2013. "I have to say, I think I'm incredibly lucky on a number of levels," she says. "My mother, my father and my husband have all been compatible. Plus the fact that the plasma exchange facility exists in Adelaide."

"If it were not for work that Prof Coates had been involved in with the development of plasma exchange, I highly doubt that my third transplant would have been as successful as it was. I think it's just incredible that we now have this ability to transplant previously un-transplantable people, and it's given me my life back twice! Hopefully I won't need it again."

"The effect of the transplant on our lives has been immediate and quite profound. So enabling technologies, like the research at Royal Adelaide Hospital is incredibly important." says Paul. "We have our lives back and we're incredibly grateful to Prof Coates, the Royal Adelaide Hospital and the fantastic staff there that made all of this possible, not just through our experience, but the ongoing research that happens behind the scenes."



Your story

So that research can be illustrated in a more meaningful way, the RAH Research Fund is constantly looking for stories about peoples personal experiences with clinical trials, disease and medical discoveries that help them. If you would like to share your story with us, so that we can use it to explain how important research is to the community, please call us on 08 8222 5281 or email us on RAHresearchfund@health.sa.gov.au.

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The RAH Research Fund's Privacy Policy is available from the Fund's office.

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