



Otago Medical
Research
FOUNDATION

2025 Annual Report

Annual Report to 31st March 2025

Charities Number: CC33444

WWW.OMRF.ORG.NZ

ABOUT THE FOUNDATION

The Otago Medical Research Foundation (OMRF) is dedicated to supporting important medical research carried out in the Otago region, and encouraging young and gifted people to engage in research.

The Foundation supports innovative, early stage medical research projects and student summer research scholarships in Otago. Whilst the research is undertaken in Otago, there is no doubt that discoveries made during these projects can have both national and international benefits.

Since 1967, OMRF has committed over \$12 million to a wide range of medical research. We receive no Government funding and rely entirely on the generosity of our community through bequests, trusts, sponsorship, and fundraising events.

WHY YOUR SUPPORT MATTERS

We've all been touched by the benefits of medical research. OMRF funds a broad range of research that leads to better health outcomes for our community. Your support helps ensure this vital work continues.

WAYS YOU CAN SUPPORT THE FOUNDATION:

- Donate directly to our bank account
- Leave a bequest in your will
- Become an OMRF Club Otago member
- Attend our fundraising events

To donate please go to our website www.omrf.org.nz or donate directly to our ANZ bank account Otago Medical Research Foundation 01 0815 0104572 00

OUR FUNDS ARE:

Annual Grants – our premier round of year-long, innovative early-stage research projects, normally up to \$40,000 per grant.

Student Summer Scholarships – 10-week student summer research projects, supervised by senior researchers. These often lead to research and teaching careers for the students, with the projects contributing knowledge to the field. In 2024/25 the scholarships were valued at \$6,000 which goes directly to the students as a non-taxable salary equivalent.

Jack Thomson Bequest – research into the problems and treatment of arthritis.

Laurenson Bequest – research into the effects of proper diet and/or drugs on human health.

You can read about recent research projects funded in the Scientific Committee report on page 12.

The Foundation is a careful steward of donations, which are conservatively invested as required by our Constitution.

LEAVING A LEGACY

A bequest is a powerful way to support medical research for future generations.

By leaving a gift in your will to the OMRF, you create lasting impact.

“Every person's journey is different, but if you're looking for a practical way to give back and fight the impact of these diseases on individuals and families, the bequest option is a good choice.”

- OMRF donor.

ALLOCATING FUNDS:

Grants and scholarships are awarded based on available funds and are highly competitive. All applications are reviewed by the Foundation's expert Scientific Committee, which includes representatives from all major sub-disciplines of medical research.

This ensures that we support only the most relevant and promising projects – building health outcomes in Otago, Aotearoa and beyond, while growing talent in our region.

Medical research is life-changing. Our supporters are too.

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CHAIRPERSON'S REPORT

2025 GRANTS TOTALLED

\$376,133

TOTAL AMOUNT FUNDED*

\$12,104,810

*Since the Foundation's inception

It is with pleasure that I present the 57th Annual Report on the Otago Medical Research Foundation's activities for the 2025 financial year.

During the year under review, the Foundation approved Grants totalling \$376,133, an increase of \$6,076 on last year's total of \$370,057. Since the Foundation's inception, a total of \$12,104,810 has been spent on medical research in Otago.

The extract from the Financial Statements, as published elsewhere in the Annual Report, shows a deficit for the year of \$89,116 compared with a deficit for the previous year of \$155,293, which is \$66,177 lower than last year. Total Operating Income (Donations, Bequests, Subscriptions and Investment Income) increased by \$98,484. Within Expenses, the secretarial fee increased by \$40,742 and legal fees accounted for \$33,470 but there was a decrease in salaries and wages of \$46,608. This year's income included a realised gain of \$24,889 on sale of Investments while in the previous year there was no gain on disposal of Investments. It would be good to see an increase in the receipt of further injections of capital for investment, which would help counter the reduced investment rates that we earn on our conservatively invested funds.

The Investment Sub-Committee has continued to face the challenge of finding suitable low risk investments while acknowledging that income and growth are also important. The reinvestment of maturing fixed interest investments remains a major challenge, although it is starting to improve again. It is pleasing to report that at balance date, the market value of our Company Securities and Shares shows an unrealised gain on cost of \$1,560,020, which is 81% of cost.

At 31 March, 2025, Accumulated General Funds has a Deficit of \$568,624 and Accumulated Special Funds a Surplus of \$4,795,836 yielding a total of \$4,227,212, both these figures comprising Capital and Income.

This year marked the 28th year in which the Otago Community Trust has awarded an Annual Grant to the Foundation with the details of grants awarded from this

year's funding being published in the Scientific Committee Report. This brings the total grants received from the Otago Community Trust to \$2,031,000 - a truly generous contribution. On behalf of all members of the Foundation and all researchers based in Dunedin I would like to sincerely thank the Otago Community Trust for their very generous, and much needed, contributions over the 28 years.

The Foundation is deeply indebted to those people who have named the Foundation as a beneficiary in their wills. Medical research is a never-ending activity, and the role of the Foundation will continue as long as there are medical scientists willing to ask critical questions and people willing to help fund these researchers in their quest for the vital answers. I would ask members to consider the Foundation when preparing their wills. A bequest to the Foundation will be effectively used and your influence will be felt beyond your lifetime.

ANNUAL REPORT 2025

This is shorter than in the past, and confined as it should be to the financial reporting period (1 April 2024 to 31 March 2025), except for the Scientific Committee report which is 1 July 2024 to 30 June 2025 to match the various deadlines associated with the grants disbursed. We are also trialling distributing our Annual Report digitally only which the OMRF Council agree is important - not only for cost-saving but from a sustainability perspective.

Foundation activities are now covered in more detail on our website www.omrf.org.nz as well as in our regular Newsletters and social media posts. I encourage you to follow our **Facebook** and/or **LinkedIn** pages to receive up-to-date information about the Foundation and the exciting research and fundraising events taking place.

COUNCIL MEETINGS & MEMBERSHIP

During the period under review (1 April 2024 to 31 March 2025), Council Meetings were held on 29 May, 10 July, 23 October, 10 December 2024 and 11 March 2025, with the Patron and Engagement Manager (or for May and July the Director of Development and Event Manager) in attendance for all but the Council-only section. The Executive Sub-Committee meetings occurred approximately monthly.

Changes in Council since the 2024 Annual Report are as follows:

Ex-officio members: Professor Lisa Matisoo-Smith (as Dean of the School of Biomedical Sciences) stepped down at the March 2025 Council meeting and has been replaced by Professor Julia Horsfield. The Dean of the Dunedin School of Medicine position was filled at the December 2024 Council meeting by Professor Seutonia Green. Appointed members: Professor Shyamal Das holding the position for President of the Otago Medical Research Society was farewelled at the December 2024 Council meeting and replaced by Dr Emily Gray at the March 2025 Council meeting. We are still seeking a person to represent the Southern Region of Health New Zealand | Te Whatu Ora.

CONSTITUTION

The changes to the Foundation's Constitution approved at the October 2023 AGM, relating to extending the term of elected members and chair of Council from 1 year to 3 years, were actioned at the October 2024 AGM and its ensuing Council Meeting. Further changes to the Constitution, primarily to meet compliance with the 2022 Incorporated Societies Act, will be considered at the October 2025 AGM. My thanks to the Deloitte team and an Anderson Lloyd representative for the painstaking work on the Constitution refresh.

THANKS

- Firstly, and most importantly, to all those Trusts, Companies, Individuals, Foundation Members, Club Otago Members and Non-Members listed in this Annual Report who have supported the Foundation in the year under review. The Foundation is very grateful that it has continued to receive the support that it has in these continuing difficult economic times.
- To the Foundation's past Director of Development (Susan Sims) and past Event Manager (Sarah Rickerby), whose employment with the Foundation finished in mid-September 2024, my sincere thanks.
- To the holder of the new single position of Engagement Manager, Tracey Fleet, my grateful thanks for your highly informative reports to Council and the Executive, your engaging monthly email Newsletter to members and supporters, your frequent posts on social media, and for all you have achieved since starting on 22 October 2024.
- To the Scientific Committee and their dedicated Chairperson, Professor Greg Jones, and Deputy Chairperson, Associate Professor Heather Cunliffe, for the many long hours spent on the assessment of and advice on grant applications to ensure a transparent and robust process which ensures the Foundation's funds are used in the best possible way. Thank you; your efforts are really appreciated. Without you all, we would not be able to achieve the objective of the Foundation: "The Furtherance of Medical Research in Otago".



- To all Council Members, and our Patron, Emeritus Professor Gil Barbezat, for your contribution and support, my sincere thanks for your continued interest in, and work done, for the Foundation.
- To the Investment Sub-Committee members, Michael Milne, Jamie Adamson and Louisa Homersham, for their wise counsel, advice and time so willingly given to serve on this Sub-Committee, I thank you most sincerely.
- To the Deloitte team of Jamie Adamson, Nathan Rudd-Lee, Josh Aitcheson and Trudy Corbett for continuing to provide very professional, friendly and efficient administrative services for the Foundation and for the extra work entailed during the transitions from the two positions (Director of Development and Event Manager) to the single position of Engagement Manager. Jamie and Nathan are the face of Deloitte for Council while Trudy works quietly in the background and Josh fills in for Nathan when required, ensuring that the Foundation's day-to-day requirements are attended to in a timely and professional manner which is very much appreciated.
- To my fellow members of the Executive Sub-Committee, Greg Jones and Jamie Adamson, who meet monthly or more frequently if required, and with the Engagement Manager (previously Director of Development and Event Manager), to keep things progressing in between Council meetings and to scope new initiatives, my grateful thanks.

On behalf of the Council

Emeritus Professor Pat Cragg
Chairperson

THE OTAGO MEDICAL RESEARCH FOUNDATION COUNCIL

EX OFFICIO MEMBERS

Prof G Jones
Chairperson of Scientific Committee

Mr J Adamson
Deloitte (Secretaries)

Prof J Baxter (to July 2024)
Dean Dunedin School of Medicine

Prof S Green (from December 2024)
Dean Dunedin School of Medicine

Prof L Matisoo-Smith (to March 2025)
Dean Otago School of Biomedical Sciences

Prof J Horsfield (from March 2025)
Dean Otago School of Biomedical Sciences

Assoc Prof H Cunliffe
Deputy Chairperson of Scientific Committee

APPOINTED MEMBERS

Te Whatu Ora Southern Representative
Vacant position

Assoc Prof T Slatter
University of Otago Health Sciences
Division Representatives

Prof K Krause
University of Otago Health Sciences
Division Representatives

Assoc Prof S Das (to December 2024)
President of the Otago Medical
School Research Society

Dr E Gray (from March 2025)
President of the Otago Medical
School Research Society

ELECTED MEMBERS

Emeritus Prof P Cragg

Dr M Coleman

Mrs S Knowles

Mr M Milne

Mrs L Homersham

EXECUTIVE

Emeritus Prof P Cragg
Chairperson

Prof G Jones
Deputy Chairperson

Deloitte representative
Secretary/Treasurer

SCIENTIFIC COMMITTEE

Prof G Jones
Chairperson
Department of Surgical Sciences,
Dunedin School of Medicine

Assoc Prof H Cunliffe
Deputy Chairperson
Department of Pathology,
Dunedin School of Medicine

ENGAGEMENT MANAGER

Mrs T Fleet

SECRETARIES

Deloitte

HONORARY SOLICITOR

Mr J Anderson (Gallaway Cook Allan)

AUDITORS

Crowe

PATRON

Emeritus Professor G Barbezat

THE OTAGO MEDICAL RESEARCH FOUNDATION MEMBERSHIP

ORDINARY MEMBERS

Prof W C Abraham
Ashburn Hall Charitable Trust
Emeritus Prof G Barbezat
Mr J Burton
Mr M Farry
Prof M Hibma
Ms J O'Rourke
Dr W Sutherland
Dr & Mrs G P White
Assoc Prof S Wilbanks
Dr J I Clayton
Dr A Cook
Mrs L Homersham
Prof I L Lamont
Emeritus Prof Sir D C G Skegg

RESEARCH PATRONS

Hope & Sons Limited

LIFE MEMBERS

Mrs J Callon
Cerebos Gregg's Ltd
Mr P Chronican
Mr S Davie
Donaghys Ltd

Dunedin City Council
Farra Engineering Ltd
Mr & Mrs H Fraser
Dr C M Goodall
Janssen-Cilag Pty Ltd
Mr R Lewis
Lions Club Dunedin South
Ms S Mackinlay
Marsh Family Charitable Trust
Mr D Marsh
Mr W J Marsh
Dr J A McMahon
Mondelez New Zealand
Emeritus Prof J G Mortimer
Roche Products (New Zealand) Ltd
St Margaret's College Council
Mr I A Thomson
Trojan Holdings Ltd
Mr H R Wilson & Mrs N Ellis

HONORARY LIFE MEMBERS

Mr G T Adams
Mrs E Brown
Emeritus Prof P A Cragg
Mr K G Dempster
Prof Sir J I Mann
Rotary Club of Dunedin South
Rotary Club of St Kilda
Dr C N A & Mrs J Trotman
Prof R J Walker

"Medical research is a never ending activity and the role of the Foundation will continue as long as there are medical scientists willing to ask critical questions and people willing to help fund these researchers in their quest for the vital answers."

- Emeritus Professor Pat Cragg

ENGAGEMENT MANAGER'S REPORT, EVENTS & CLUB OTAGO



Although I joined the Foundation in late October 2024, I am pleased to report on a year of significant change and continued impact.

I'd like to acknowledge Susan Sims (Director of Development) and Sarah Rickerby (Events Manager) for their contributions up until September. Since stepping into the role, I've prioritised engaging with our community and raising awareness of the vital medical research the Foundation supports in Otago - a focus that will continue in the year ahead.

It has been a challenging environment for fundraising, but we are deeply grateful for the ongoing support we've received. Despite tighter funding, we awarded a number of high-calibre research grants and summer research scholarships. A January event co-hosted with the University of Otago showcased the value of these 10-week scholarships, with several students also volunteering at our Gala in February, demonstrating their appreciation and commitment to the Foundation.

Event turnout was lower than hoped, but with signs of economic recovery, we are optimistic about increased engagement and support. A summary and photos of this year's events follow this report.

My sincere thanks to the Foundation's Council and to Deloitte for their invaluable support. Special appreciation goes to our Executive - Emeritus Prof Pat Cragg (Chair), Prof Greg Jones (Scientific Committee Chair), and Jamie Adamson (Deloitte), for their guidance and openness to ideas I have brought to the table.

I also thank Craigs Investment Partners for

expertly managing our investments through a volatile year, Crowe for their auditing services, and Walsh & Beck for their ongoing support with our digital presence and Gala visuals.

Thanks also to Logic Studio, Prosouth, and other businesses who offer discounted services and advice, as well as the individuals, families, businesses and trusts whose generosity continues to drive our mission of "the furtherance of medical research in Otago".

I look forward to connecting further with our community in 2025 and building on the strong foundation that supports world-class medical research here in Otago.

GOLF TOURNAMENT 10 May 2024

As covered in last year's Annual Report, this popular event remains a highlight on our calendar. Thank you again to all who supported it — we look forward to the 2025 tournament on 12 September.



OMRF GALA

14 February 2025

We embraced the fact that the Gala was on Valentine's Day and themed the Town Hall with pink, red and purple thanks to the expertise of Strawberry Sound, Walsh & Beck, Meadow Creative and Estelle Flowers..

Doug Kamo returned as MC and entertainer, leading the largest cast in Gala history. Highlights included a "Greatest Showman" opening, the Denise Henderson Dance Troupe, and vibrant performances from Niche.

Our Face of Research, Prof John Reynolds (Department of Anatomy, University of Otago), reminded guests of the importance of the OMRF by giving them a snippet of his research which started from an OMRF grant several years ago. This has now resulted in an exciting new company being established for the development of a drug-delivery platform for the treatment of Parkinson's disease, brain cancer and epilepsy.

Guest speaker Matt Chisholm shared an uplifting conversation with Doug about his time on national television as a reporter and then reality TV host. His honesty about his battle with alcohol, anxiety and depression offered inspiration and laughter.

Thank you to auctioneer Rob Fowler, photographer Chris Sullivan, our summer scholarship students who helped on the night, our sponsors and of course our wonderful guests. With limited lead time, the evening was a fantastic success. We're excited for our next Gala on 27 March 2026 and would love for you to join us as a guest and/or sponsor.

Sponsors

Silver Sponsors:

Anderson Lloyd, OceanaGold.

Supporting Sponsors:

Forsyth Barr, Misha's Vineyard, Scenic Hotel Southern Cross, Strawberry Sound, Walsh & Beck.

Auction Prize Sponsors:

Altitude Tours, Cardrona Distillery, Chamberson Hotel, Dunedin City Motors, Ewan McDougall, Fiordland Discovery, Fiordland Lakeview Motel and Apartments, Floatfix, Lamach Castle, Glenfalloch, John Toomer, Matt Chisholm, Michelle Chalklin-Sinclair, Millbrook Resort, Misha's Vineyard, Nest Tree Houses, NZ Cricket, OceanaGold, Paris Sinclair, Riverstone Kitchen, Sam Foley, Suzie Bates, The Highlanders, The Swan, Two Paddocks, Waiorau Homestead.

Raffle Prize Sponsors:

Estelle Flowers, Lion New Zealand, Mitre 10 MEGA, Natures Wonders, No 7 Balmac, Rialto Cinemas, St Clair Golf Club, The Perc, Zaiabatsu.



OMRF CLUB OTAGO

Club Otago events continue to provide a platform for connection, hearing high-calibre speakers, and showcasing OMRF-funded research.

23 August 2024

Guests were given a special tour of the exhibition "Giovanni Intra, Side Effects" with Curator Anna McLean at the Dunedin Public Art Gallery.

5 December 2024

Melanie Millier (Dunedin School of Medicine) shared her research on a trial on measles vaccine via inhalation. After lunch, Dr Ian Griffin (Director at Tūhura Otago Museum) took us on a photographic journey whilst sharing some personal stories about his family, his love for Dunedin and astronomy, and his passion for museums.

3 April 2025

Our first after-work Club Otago was held in the Long Room at the University of Otago Cricket Oval – what better place when your speaker is White Ferns and Otago Sparks legend, Suzie Bates.

Dr Kate Thomas (Dunedin School of Medicine) talked about the importance of exercise in brain health. This was followed by a compelling conversation between Suzie and Warren McSkimming (ex-Otago Volt and now Commercial Manager at Otago Cricket), about her childhood and incredible journey in professional sport.

JOIN US

Become a Club Otago member at omrf.org.nz/club-otago or email info@omrf.org.nz.

Membership is open to all - individual and corporate memberships available.

All proceeds support life-changing medical research in Otago.

OMRF Club Otago Members for 2025 Annual Report:

PATRONS



SENIOR FELLOW

Calder Stewart

FELLOW

Deloitte

Delta Utility Services

Ross & Bev Middlemass

ASSOCIATE FELLOW

Forsyth Barr Limited
(Damian Foster)

Harvie Green Wyatt
(Craig Wyatt)

INDIVIDUAL

Adam Binns
(Quantify Consulting)

Janine Young

Polson Higgs

Adam La Hood, Blair McGill
(Cook Brothers Construction)

Jeff & Heather McKenzie

Robert & Jill Reid

Ant & Chris Wither
(Awhirk Farms)

John & Jacqui Brensell
(Paper Plus Dunedin)

Simon Parker
(Parker Warburton Team Architecture)

Dr Michael Schultz
(Gastroenterology Otago Ltd)

Michael Milne
(Craigs Investment Partners)

Tracy Stevenson
(Webb Farry Lawyers)

Dr. Paul Templer

Noel Davie

Will McMillian

Emily Lam

Peter & Paula Anstey

Hamish Caithness
(Oteha Valley Holdings)

PKF Dunedin Ltd
(Alison Glover)

FUNDS RECEIVED



Community Grants and Donations

\$294,061



Events

\$27,585



Bequests

\$58,871



\$380,517

DONATIONS:

ACE Shacklock Charitable Trust
EMM Haynes Charitable Trust
J Burton

J Hinds
M L Kumar
S Wilkinson

SpecSavers Dunedin
W Anglin
W Sutherland

GRANTS:

A Goulding
Aotea Group Holdings Limited
Aotearoa Gaming Trust
Deloitte

JAD Iverach Memorial Fund
Mactodd Charitable Trust
Mike Bird and Friends

The Healthcare Otago
Charitable Trust
William Downie Stewart
Charitable Trust

BEQUESTS:

Ethel Johnston Charitable Trust

H Robert Wilson Bequest

FUNDING DISTRIBUTION

SUMMER RESEARCH SCHOLARSHIPS



Immunity/
Microbiology
\$18,000



Clinical
Medicine
\$6,000



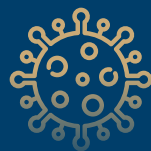
Vascular
Disease
\$6,000



Women's
Health
\$6,000



Surgical Care
\$6,000



Infection
\$6,000



Brain
\$18,000

ANNUAL GRANTS & OTAGO COMMUNITY TRUST



Brain
\$39,638



Diabetes
\$33,600



Cancer
\$83,699



Immunity/
Microbiology
\$39,755



Genes/Bowel
Health
\$39,974

LAURENSEN BEQUEST



Diet
\$39,925



Osteoarthritis
\$40,000

JACK THOMSON BEQUEST

OMRF RESEARCHER PROFILE

RESEARCHER SPOTLIGHT

DR ALISA BOUCSEIN

The research that Dr Alisa Boucsein is leading in the Department of Paediatrics & Child Health at the Dunedin School of Medicine, University of Otago has already produced life-changing outcomes for people with Type 1 diabetes.

Alisa came to the University of Otago as a visiting PhD student from Germany in 2015, with her doctorate in Physiology focused on obesity and Type 2 diabetes. Having been diagnosed with Type 1 diabetes when she was 13, Alisa had always hoped to move into this field of research.

“When I was diagnosed with Type 1 diabetes as a child in Germany, the therapy options were very limited. Having to inject insulin manually every time I wanted to eat was extremely challenging, particularly as a teenager”, Alisa recalls.

Knowing these challenges first-hand, Alisa jumped at the opportunity to join Prof Ben Wheeler and his team. An early project tested automated insulin delivery systems in children with Type 1 diabetes. The results, Alisa says, were striking.

“The data showed huge improvements in health, with an additional 8.5 hours per day spent in the healthy

blood sugar range. This meant less stress and anxiety for children and their families, and a marked increase in quality of life”.

Building on this success, the Otago Medical Research Foundation is now funding Alisa’s latest study, focusing on Māori and Pasifika adults using a smart insulin pump. This device automatically adjusts insulin doses, reducing the daily burden of injections.

Alisa values the close relationships built with participants over the course of these studies and is excited to continue this in her current project. She is also optimistic about the future: as pump technology advances, fully automated systems are on the horizon.

“It is incredibly rewarding to see people benefit and to receive such positive feedback. It’s estimated that people with Type 1 diabetes make around 180 extra decisions every day compared with those without the condition - from what to eat, to how much insulin to take. This technology can ease that constant mental load, giving people more freedom and better health.”

The Foundation wishes Alisa all the best with her project - funds for which were generously funded by the Mactodd Community Charitable Trust.

“It is incredibly rewarding to see people benefit and to receive such positive feedback [...] This technology can ease that constant mental load, giving people more freedom and better health.”



SCIENTIFIC COMMITTEE REPORT

1 July 2024 to 30 June 2025

1. MEMBERSHIP

Chair: Professor Greg Jones

Deputy Chair: Associate Professor Heather Cunliffe (Co-opted)

Associate Professor Hesham Al-Sallami (Co-opted)

Dr Nils Birkholz (Co-opted)

Dr Sierra Beck (Nominee Dunedin School of Medicine)

Associate Professor Chris Brown (Co-opted)

Dr Tanya Cully (Co-opted)

Professor Shyamal Das (President OMSRS, ex officio 2024)

Associate Professor Allan Gamble (Co-opted)

Dr Olivia Galea (Co-opted)

Dr Emily Gray (President OMSRS, ex officio 2025)

Dr Nick Heng (Co-opted)

Associate Professor Rajesh Katare (Nominee of the Otago School of Biomedical Sciences)

Dr Joon Kim (Co-opted)

Professor Ivan Sammut (Co-opted)

Professor Rob Walker (Co-opted)

Dr Natasha Flack (Co-opted)

Dr Rhodri Harfoot (Co-opted)

The Scientific Committee is primarily concerned with adjudicating on applications for Research Grants and on applications from students for Summer Research Scholarships. To cover the breadth of topics submitted, the committee is relatively large to ensure it has representatives from all the major sub-disciplines of medical research.

During the last year the Scientific Committee welcomed Drs Nils Birkholz, Olivia Galea and Emily Gray, and farewell Prof Shyamal Das, Assoc Prof Hesham Al-Sallami and Drs Tanya Cully, Natasha Flack and Rhodri Harfoot. The Foundation thanks them for their invaluable contributions to the Committee.

The Scientific Committee continued to receive many high-calibre research applications and summer research scholarships. Unfortunately, many excellent projects were unable to be supported due to limited funds.

Please note that most, but not all research projects, have protocols that require approval by the appropriate Ethics or Safety Committee prior to commencement of the research. Agreement by the Foundation to fund research projects is thus subject to receipt by the Chair of the Scientific Committee of a letter from the University of Otago's Animal Ethics Committee, Human Ethics Committee or Human Ethics Committee (Health) (or the Ethics Committee of a Health Funding Authority) indicating that the research has received full ethical approval. Work involving genetically modified organisms requires evidence of approval from ERMA or from the University of Otago's Institutional Biological Safety Committee.

The Otago Medical Research Foundation has continued its commitment to openness on the use of animals in health research as a signatory of The Openness Agreement on Animal Research and Teaching in New Zealand, and has provided its third report on progress to **ANZCCART**.

The Foundation recognises the important contribution that animal research has made to the advancement of modern medicine. Some of the research projects funded by the Foundation may involve animals and we are committed to only supporting studies that maintain high standards of animal welfare and adhere to the ethical tenants of refinement, reduction and replacement.

The scientific activities of the Foundation (advertising of up-coming grants and listings of awards) can be found on our website www.omrf.org.nz

SUMMER RESEARCH SCHOLARSHIPS 2024/2025

78 applications (compared with 98 the previous year) for an OMRF summer research scholarship were received from the University of Otago in August 2024. Unfortunately due to a decrease in funding, only 11 (compared to 17 in the preceding year) were recommended for funding by the OMRF. It should be noted that the ten-week summer research is not part of the study required in a student's tertiary qualification and any data obtained during the summer research cannot contribute to the dissertation or thesis of such a qualification.

Each OMRF scholarship was worth \$6,000. Unfortunately due to financial constraints, we were unable to award the two prestige scholarships valued at \$7,000 (named in honour of the late Allan Wilkinson and the late Emeritus Professor Garth McQueen). We hope to be able to award these next year.

The 11 OMRF scholarships were funded by the following people and businesses, and we sincerely thank them for their support: Aotearoa Gaming Trust (x4); Professor Ailsa Goulding (x2); Deloitte Dunedin; Healthcare Otago Charitable Trust; K & J Scott Family Trust; OMRF Iverach; and Walsh & Beck.

The OMRF summer research scholars attended a function co-hosted with the University of Otago in January 2025. All summer research scholars across the University were invited together with supervisors, funders and the OMRF Council. It was an excellent opportunity for the students to get together towards the end of their project and reflect on their experience, as well as being able to meet their funders.

All scholars returned excellent reports at the end of February 2025. The Renshaw Prize (\$250) for the best report was awarded this year to Luke Geddes (who worked under the guidance of Dr Indranil Basak in the Department of Biochemistry, School of Biomedical Sciences, University of Otago).

The following is a list of the summer scholars and summaries of the projects undertaken – additional information on these projects can be obtained from the Chair of the OMRF Scientific Committee or from the supervisor concerned.

RENSHAW PRIZE WINNERS

The Renshaw Prize is named after one of the founders of the Otago Medical Research Foundation Inc., the late Dr P.K. Renshaw. The prize of \$250 is awarded to the Summer Research Student, who in the opinion of the Scientific Committee, amongst the Research Scholars supported, has made the most worthwhile contribution to medical research in that particular year. In recognition of their contribution, prize winners' names are listed below:

1970 - Mr A.G. Yule	2000 - Mr J. Wales
1971 - Mr K.J. Davey	2001 - Mr M. Rahimi
1972 - Mr F.M. Patrick	2002 - Ms S. Jordan
1973 - no award	2003 - Ms E. Szymlek-Gay
1974 - Mr J.C. Montgomery	2004 - Mr D. Kieser
1975 - Mr A.S. McLean	2005 - Mr C. Young
1976 - Mr N.K. Given	2006 - Mr C. Young
1977 - Miss F.M.F. McQueen	2007 - Mr S. Smart
1978 - Mr K.D. Jolly and Mr J.P. Scott	2008 - Ms S. Saunderson
1979 - Mr R.A. Henderson	2009 - Ms J. Lee and Ms E. Winsley
1980 - Mr D.W. MacFarlane and Mr D.W. Shaw	2010 - Mr J. Zhang
1981 - Mr N.E. Dickson and Mr Wong Ooi	2011 - Miss E. Gavey, Mr E. Ottley, and Mr W. Parkyn
1982 - Miss C. Page	2012 - Miss Su Zhou
1983 - Mr I.L. McLean	2013 - Mr Fly Ing-Aram
1984 - Mr I.L. McLean	2014 - Katie Hoeksema and Deepa Mistry
1985 - Miss B.C. Galland	2015 - Alice McSweeney
1986 - Mr R.G. Snell	2016 - Nigaah Khan and Isabelle van Hout
1987 - Mrs T.E. Inder	2017 - Sashika Samaranayaka
1988 - Miss M. Kuipers	2018 - Simone Thomas
1989 - Miss E.R. Dennett	2019 - Eleni Hackwell
1990 - Miss A. Charlton	2020 - Nathan MacDonell
1991 - Mr B. McKenzie	2021 - Ella Macbeth
1992 - Mr J.W. Corboy	2022 - Sarah Barber
1993 - Ms S.M. Dillon	2023 - Thomas Noble-Campbell and Annabel Walsh
1994 - Ms N. Dalbeth	2024 - Finlay Anderson and Sana Atihi
1995 - Mr T. Zaharic	2025 - Luke Geddes
1996 - Mr M. Morrison	
1997 - Mr A. Brown and Ms S. Safari	
1998 - Mr J. Magnum	
1999 - Ms J. Pitchforth and Ms A. Steyn	



LUKE GEDDES

Supervisor: Dr Indranil Basak, Department of Biochemistry, School of Biomedical Sciences

Renshaw Prize Winner for the best OMRF summer research scholar report

PROJECT: Investigating neuron-astrocyte crosstalk in Parkinson's disease

Funder: Aotearoa Gaming Trust

ABSTRACT: Parkinson's disease, often diagnosed after significant neurodegeneration, remains incurable. This project investigated the role of ATP13A2-deficient astrocytes in dopaminergic neuron health, using Kufor-Rakeb syndrome as a model. Induced pluripotent stem cells (iPSCs) were differentiated into astrocytes and dopaminergic neurons, with ATP13A2-deficient and wild-type cells co-cultured. Immunofluorescence and MitoTracker assays revealed a 68.8% decrease in neuronal survival after 11 days and a 42.3% decrease after 21 days with ATP13A2-deficient astrocytes. Mitochondrial fluorescence increased significantly, suggesting mitochondrial dysfunction. The findings indicate that ATP13A2-deficient astrocytes exacerbate neuronal death, likely due to impaired protection against oxidative stress and disrupted lysosomal homeostasis. This study underscores the critical role of astrocytes in Parkinson's pathology and correlates mitochondrial changes with dopaminergic neuron degeneration.





ASHA BHAKTA

Supervisors: Dr Suzanne-Louise Warring & Prof Peter Fineran, Department of Microbiology & Immunology, School of Biomedical Sciences

PROJECT: Exploration of hitchhiking in bacteriophage Bas63

Funder: Aotearoa Gaming Trust

ABSTRACT: Bacteriophage hitchhiking allows phages to attach to motile non-host bacteria for dispersal. This study investigated the hitchhiking behaviour of Bas63 with *Pseudomonas fluorescens* SBW25 and the role of the capsid-decoration protein gp007. Microcosm assays showed that Bas63 exhibited increased dispersal and adsorption when co-incubated with SBW25. Increased spot diameters suggested a synergistic effect between the phage and non-host bacteria, though the mechanism remains unclear. CRISPR-Cas13a-mediated targeting of gp007 showed effective arrest of Bas63 infection, but no enrichment of recombinant gp007 deletion mutants occurred, suggesting gp007 may be essential for phage viability. These findings illustrate that phage hitchhiking can occur in differing phages. However, further structural and genetic analyses are needed to determine the mechanism enabling Bas63 to hitchhike on non-host bacteria for long-range dispersal.



JOHN CLEMANCE

Supervisors: Assoc Prof Sebastian Lippross & Fraser Harrold, Department of Surgical Sciences, Dunedin School of Medicine

PROJECT: A clinical audit of patients listed for total hip replacement to ascertain presence of developmental dysplasia of the hip

Funder: Healthcare Otago Charitable Trust

ABSTRACT: Developmental Dysplasia of the Hip (DDH) is a major contributor to early-onset osteoarthritis and total hip arthroplasty (THA). Many countries implement universal or selective screening programs, Aotearoa lacks standardised guidelines for diagnosis and referral. This study aimed to determine the incidence of DDH among individuals undergoing THA at Dunedin Hospital. Additionally, we examined gender, ethnic, and age-related variations. This retrospective review included 325 patients undergoing THA at Dunedin Hospital. Radiographic measurement of lateral centre edge angle (LCEA), Tönnis angle, Acetabular Quotient, Femoral Head Extrusion Index and Offset were done and cross over sign was noted. Other data included patient demographics (age, gender, ethnicity) and surgical history. The incidence of DDH among THA patients was 17.9 per 100 individuals. DDH was more prevalent in females than males, and non-Māori had a higher prevalence than Māori, yet underwent THA at a significantly younger age than non-Māori.



SHIVANNEE GANESHAN

Supervisors: Prof James Ussher & Dr Saki Baleivanualala, Department of Microbiology, School of Biomedical Sciences

PROJECT: Identifying novel treatment options for carbapenemase-producing WHO critical pathogens in Fiji

Funder: Aotearoa Gaming Trust

ABSTRACT: Antimicrobial resistance is a worldwide issue, particularly in low-resource settings like in Fiji, where treatment options are limited. This study aims to evaluate the effectiveness of novel antibiotics against carbapenem-resistant *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and *Enterobacteriales* isolated from Fijian hospitals. Using Minimum Inhibitory Concentration (MIC) testing, the efficacy of sulbactam-durlobactam, minocycline, and cefiderocol against *A. baumannii* and ceftazidime-avibactam, aztreonam, and cefiderocol against *Enterobacteriales* and *P. aeruginosa* were assessed. Results showed varying degrees of susceptibility, with cefiderocol displaying broad effectiveness across all tested organisms. Using synergy testing ceftazidime-avibactam and aztreonam were effective when combined to treat *Enterobacteriales*, however, aztreonam alone was effective treating *P. aeruginosa*. Findings underscore the necessity of alternative treatment strategies, improved antibiotic stewardship, and enhanced surveillance to combat drug resistance. This study provides valuable data to inform policy makers and clinical practices in managing resistant infections in resource-limited settings.



ALLY GENET

Supervisors: Prof Cliff Abraham & Dr Shruthi Sateesh, Department of Psychology, Division of Sciences

PROJECT: The role of protein synthesis in impairments of memory mechanisms

Funder: Aotearoa Gaming Trust

ABSTRACT: Synaptic plasticity is the enhancement or weakening of neuronal connections, a fundamental process for learning and memory. Metaplasticity regulates future synaptic plasticity based on previously encountered neural activity. Prior research has indicated that priming stimulation in the stratum oriens can impair subsequent synaptic plasticity in the stratum radiatum. The current study investigated whether priming stimulation elicited an increase in protein synthesis, pro-BDNF (brain-derived neurotrophic factor) levels, and tau phosphorylation within the cornu ammonis and dentate gyrus hippocampal regions. This was investigated using transgenic (IP3R2^{-/-}) and wild type littermate control mice (IP3R2^{+/+}), with electrophysiology and immunofluorescence techniques utilised. Whilst no significant increase in protein synthesis or pro-BDNF expression was observed, specific tau phosphorylation was significantly elevated post-priming. These results highlighted the complexity of metaplasticity and the need for further research into the effects of aberrant metaplasticity relations to neurodegenerative diseases.



QIYUE (TERESA) GU

Supervisors: Gerry Hill & Dr Zoe Ashley, Department of Surgical Sciences, Dunedin School of Medicine

PROJECT: The optimal patient position in the quantification of venous reflux using non-invasive ultrasound

Funder: Professor Ailsa Goulding

ABSTRACT: The gold standard for lower limb chronic venous insufficiency (CVI) quantification is venous Doppler ultrasound with the patient standing (ST) or in reverse Trendelenburg position (RT), if standing is not feasible. There is no consensus on the degree of tilt required in RT to retain Spectral Doppler accuracy. Aim: To identify the optimal position for CVI reflux quantification from both patient and sonographer perspective. Method: Recruited six participants with known lower limb CVI. Venous ultrasound exams were performed in supine, RT 30°, RT 50° and standing position. Surface electromyogram and Rapid Upper Limb Assessment was used to record sonographer workload. Questionnaires were used to record sonographer and participants experience. Result: Significant differences in venous parameters were found between supine and other positions. Supine was the easiest and least painful for both sonographer and participant while standing was the hardest and most painful. Overall RT30° was optimal considering sensitivity and comfort.



EMMA MCKAY

Supervisors: Dr Helen Paterson, Department of Women's and Children's Health, Dunedin School of Medicine; & Ragnar Anderson, School of Health, Victoria University of Wellington

PROJECT: The availability of effective emergency contraception in Aotearoa New Zealand: A qualitative study

Funder: Deloitte Dunedin

ABSTRACT: It is important that effective emergency contraception (EC) is available to prevent unwanted pregnancy after unprotected sexual intercourse. The current EC options available in Aotearoa, New Zealand are levonorgestrel (1.5 mg) and the copper IUD, despite Ulipristal Acetate (UA) being available overseas. There is no recent published qualitative research on EC in Aotearoa, thus we sought to find information about people's experiences with EC to aid an application for UA approval. Methods: 11 participants were recruited via Sexual Wellbeing Aotearoa social media who took part in semi-structured Zoom interviews. Thematic analysis was done using NVivo. Results: Participants spoke about Accessibility, Availability, Affordability and Acceptability of EC in Aotearoa. Participant knowledge gaps of EC were identified; they spoke of both positive and negative experiences with EC. Conclusion: This study provided valuable consumer information as to what measures need to be put in place for safe implementation of UA in Aotearoa.



JANAYA MITCHELL-BYRNE

Supervisors: Dr Sarah Buchanan, Department of Medicine, Dunedin School of Medicine; Dr Debbie Mason, Department of Medicine, University of Otago Christchurch; Dr Almond Leung, Department of Internal Medicine, MidCentral DHB, Palmerston North; Ms Sharon Stevenson-Hall, Dunedin Hospital; and Ms Stephanie Rout, Nelson Marlborough District Health Board

PROJECT: TIME MATTERS in Multiple Sclerosis: An audit of newly diagnosed MS in the South Island of New Zealand

Funder: OMRF Iverach

ABSTRACT: Multiple sclerosis (MS) is a chronic inflammatory disease of the central nervous system, with rising prevalence in Aotearoa. Early diagnosis and timely initiation of disease-modifying therapies (DMTs) are crucial for improving outcomes. This study assessed the quality of MS care in 163 newly diagnosed MS patients (2022-2023) in the South Island against international Time Matters in MS standards. Subgroups were analysed for potential disparities. The majority of patients met core standards or above of the TIME MATTERS standards. 75% met the achievable standard for diagnosis to first follow-up appointment. However, the mean referral-to-diagnosis time was 24.9 weeks, with 56% not meeting the core standard. No significant differences were found in diagnosis-to-DMT initiation or referral-to-diagnosis time across ethnic or socioeconomic subgroups. Findings highlight strengths in early treatment but identify areas for improvement, particularly in diagnostic timeliness and follow-up care. Addressing these gaps is essential for optimising MS care and reducing health disparities in Aotearoa.



CONNOR NICHOLLS

Supervisors: Dr Owen Jones & Prof Cliff Abraham, Department of Psychology, Division of Sciences

PROJECT: Calcium channel-mediated plasticity in a model of frontotemporal dementia

Funder: Walsh & Beck

ABSTRACT: Frontotemporal dementia (FTD) is a degenerative brain condition, often caused by mutations to the Microtubule Associated Protein Tau gene. These mutations trigger tau protein to detach from microtubules and aggregate. However, these processes are typically associated with older age. In young FTD model mice, synaptic plasticity depends on L-type voltage-gated calcium channels (L-VGCCs) instead of typical NMDA receptors. Furthermore, the detachment of mutant tau triggers an enzyme cascade which increases L-VGCC activity, potentially explaining this effect. Using field electrophysiology in FTD model mice, we found L-VGCC activity elevated cellular activity persistently, confirming a lasting form of plasticity. We also found that stabilising microtubules slightly reduced the abnormal plasticity, indicating a possible role of tau detachment, but further investigations are required. Using patch-clamp electrophysiology in older animals, we found the effects of L-VGCC activation on neuronal excitability were greater in wild type mice than in FTD-model mice at this age.



ABRAHAM SIAW

Supervisors: Assoc Prof Hitin Li Aung and Dr Saki Baleivanualala, Department of Microbiology and Immunology, School of Biomedical Sciences

PROJECT: Validating the presence of large genome deletions (LGD) in drug-resistant *Mycobacterium tuberculosis* (DR-TB) isolates

Funder: Professor Ailsa Goulding

ABSTRACT: Tuberculosis (TB), caused by *Mycobacterium tuberculosis* (Mtb), claims 1.2 million lives annually. The rise of drug-resistant TB (DR-TB) strains further exacerbates the situation. Previous studies using Illumina short-read sequencing identified large genomic deletions (LGDs) of more than 5kb, comprising phospholipases gene cluster (plcABC) and PPE38 genes in DR-TB strains, but its limitations in resolving long repetitive regions leave gaps in our knowledge. This study used Oxford Nanopore Technology (ONT) long-read sequencing to confirm that this LGD is a true structural variant, not an artifact of short-read sequencing. These genes are key to Mtb virulence: plcABC supports pathogenesis and lipid metabolism, while PPE38 aids immune evasion. Interestingly, their deletion in DR-TB suggests a potential link between virulence factor loss and drug resistance, challenging current understanding. Further research is needed to explore the functional impact of these deletions, which may offer new insights into DR-TB mechanisms and therapeutic strategies.



NICOLE WHITTAKER

Supervisor: Assoc Prof Matloob Husain, Department of Microbiology and Immunology, School of Biomedical Sciences

PROJECT: Acetylation in inflammasome-mediated sensing of influenza virus infection

Funder: K and J Scott Family Trust

ABSTRACT: The NLRP3 inflammasome is an innate immune molecule which senses influenza A virus (IAV) infection and activates the proinflammatory response to eliminate it. It has five main components (NLRP3, ASC, caspase-1, IL-1 β , and IL-18), and signals in two steps, the first being priming, where infection triggers the transcription of these components to increase.

Acetylation is known to enhance IAV infection, but the relationship between acetylation and the priming of the IAV-induced inflammasome is unclear and is the focus of this study. To increase acetylation, we depleted the expression of class I histone deacetylases (HDACs), then monitored the transcription of NLRP3 and caspase-1 by RT-qPCR.

We found that caspase-1 transcription decreased with lowered HDAC1-3 expression, and NLRP3 decreased with lowered HDAC1 and HDAC3. HDAC8 knockdown results were inconclusive.

This research aids our understanding of the impact of acetylation on the inflammatory response and could contribute to development of anti-IAV strategies.

3. ANNUAL GRANTS & OTAGO COMMUNITY TRUST GRANTS

ANNUAL GRANTS

These one-year grants are for research concerned with human health and the scientific basis of medicine. In July 2024 there were 19 applications from the University of Otago (compared with 16 the previous year) totalling \$606,750 and seven of these were funded or partially funded at a total expenditure of \$236,417, of which \$80,000 was generously provided by the Otago Community Trust. These grants commenced between August and October 2024 and are nearing completion with full reports due three months after the one-year grant ends. Abstracts from the final report will be available on the OMRF website www.omrf.org.nz at the end of 2025. The funded projects are summarised below:

Dr Alisa Boucsein

(Department of Women's & Children's Health, Dunedin School of Medicine, University of Otago)

Co-investigators: Prof Ben Wheeler, Department of Women's & Children's Health, Dunedin School of Medicine, University of Otago; and Assoc Prof Ryan Paul, Te Huataki Waiaora School of Health, University of Waikato

Longer-term access to automated insulin delivery for Māori and Pacific adults

Sponsored by Mactodd Community Charitable Trust

Type 1 diabetes (T1D) is one of the most common chronic diseases diagnosed in childhood and cannot be cured; therefore, people with T1D must incur considerable burden intensively managing their blood sugar levels for the rest of their lives. Advanced diabetes technology that can improve health outcomes and reduce burden of care is available in New Zealand, however, due to a number of reasons Māori and Pacific adults are less likely to receive funded insulin pumps or have access to modern blood sugar monitoring systems. Our goal is to improve access to this advanced technology for Māori and Pacific adults, and thereby to guarantee more equitable health outcomes.

Assoc Prof Magdalena Ratajska

(Department of Pathology, Dunedin School of Medicine, University of Otago)

Co-investigators: Assoc Prof Tania Slatter & Assoc Prof Heather Cunliffe, Department of Pathology, Dunedin School of Medicine; and Dr Simone Petrich, Department of Surgical Sciences, Dunedin School of Medicine, University of Otago

Assessing HRD: A pathway to personalised PARPi therapy in ovarian cancer patients

Sponsored by Healthcare Otago Charitable Trust

When faulty, homologous recombination (homologous recombination defect, HRD) does not allow for accurate

DNA repair, and cells accumulate further mutations. Importantly, HRD is present in different tumours, including ~50% of ovarian cancers. HRD cells are sensitive to specific drugs, such as PARP inhibitors (PARPi), which block DNA repair enzymes, leading to cell death and thus, great clinical value. However, prolonged PARPi therapy may result in the development of some blood cancers; therefore, it should be given to patients whose benefit from therapy outweighs potential side effects. This study aimed to rigorously evaluate the clinical value of two available HRD tests for prognostication in ovarian cancer patients.

Dr Karen Reader

(Department of Pathology, Dunedin School of Medicine, University of Otago)

Activins: promising prognostic markers for prostate cancer

Sponsored by Aotea Group Holdings Limited

Current methods for diagnosing prostate cancer can not accurately predict whether patients with moderate grade tumours require treatment (radiotherapy or surgery) or can be safely monitored. We have shown that the levels of two proteins (activin B and activin C) in prostate cancer biopsies are related to the tumour grade. The aim of our research project is to confirm if these proteins can be used to distinguish between moderate Gleason grade tumours and higher-grade tumours in patient samples from Dunedin. This could lead to the development of a more accurate test to help clinicians and patients decide between treatment and active surveillance.

Dr Kate Thomas

(Department of Surgical Sciences, Dunedin School of Medicine, University of Otago)

Co-investigators: Dr Travis Gibbons, Northern Arizona University, USA; Prof Cliff Abraham, Department of Psychology, Division of Sciences, University of Otago; and Prof Phil Ainslie, University of British Columbia, Canada

An exercise in brain health: how does exercise liberate neurotrophic factors?

Sponsored by Aotearoa Gaming Trust

The number of New Zealanders living with dementia is expected to double by 2050. With no effective treatments available, we need interventions that delay the onset of neurocognitive decline. Exercise promotes the release of brain-derived neurotrophic factor (BDNF), a key protein that maintains brain function. We have unique methods that allow us to characterise the production of BDNF and its movement in circulation into, out of and across the brain in response to high-intensity exercise in young, healthy adults. This insight will improve understanding of the potential of exercise to maximise BDNF availability and therefore improve healthy brain ageing.

Assoc Prof Megan Wilson

(Department of Anatomy, School of Biomedical Sciences, University of Otago)

Co-investigator: Bridget Fellows, Department of Anatomy, School of Biomedical Sciences, University of Otago

Exploring the link between infertility and ovarian cancer

Sponsored by Friends of the Foundation

Ovarian cancer is a serious health issue in Aotearoa, especially affecting Māori and Pacific women. Our research focuses on a protein called LHX9, crucial for ovarian health. We aim to understand how reduced levels of LHX9 contribute to ovarian cancer and infertility. This project will use advanced techniques to study gene activity in mouse ovaries to uncover early changes leading to cancer. Our findings will help identify new strategies for prevention and treatment, offering hope for better health outcomes in high-risk communities.

OTAGO COMMUNITY TRUST GRANTS

Melanie Millier (Research Fellow)

(Department of Women's & Children's Health, Dunedin School of Medicine, University of Otago)

Co-investigators: Prof James Ussher, Department of Microbiology & Immunology, School of Biomedical Sciences; and Prof Peter McIntyre, Department of Women's & Children's Health, Dunedin School of Medicine, University of Otago

Identifying and assessing cellular immunity to measles after inhaled MMR vaccine

In Auckland's 2019 measles outbreak, young adults made up a third of total cases, with ~14% previously vaccinated with measles-mumps-rubella (MMR) vaccine. Waning of antibodies since childhood vaccination increases the risk of future outbreaks from introduced cases. Cellular immunity is less understood in young adults with low antibodies but likely contributes to measles immunity in parallel with antibody production. The Otago-led 'MAXXED' clinical trial is currently investigating new ways of giving MMR vaccine, including an inhaled mist. An internationally unique opportunity exists to include cellular immunity investigations to the antibody testing. Findings will be novel, while contributing to a more complete understanding of measles immunogenicity following inhaled MMR vaccine.

Dr Nicholas Fleming

(Department of Pathology, Dunedin School of Medicine, University of Otago)

Co-investigators: Assoc Prof Anita Dunbier, Department of Biochemistry, School of Biomedical Sciences; Prof Michael Schultz, Department of Medicine, Dunedin School of Medicine; and Gregory Gimenez, Department of Pathology, Dunedin School of Medicine, University of Otago

The immune cell landscape enabling a novel intervention in inflammatory bowel disease

Inflammatory bowel disease (IBD) is a significant and growing health burden for Aotearoa New Zealand, which currently affects at least 20,000 Kiwis. IBD patients have a limited range of treatments available, which they vary greatly in response to. Recently, a new and promising drug has been developed that has potential to cooperate with existing options and allow more patients to control

their disease. However, this new combination treatment may only work for some people. This project aims to test a novel combination treatment, as well as a genetic marker that we propose will predict response to the therapy.

LAURENSEN AWARDS

Laurenson Awards are one-year grants for research concerned with the effects of diet and/or drugs on human health. In December 2024 there were three applications requesting \$102,242, with one being funded (\$39,925). The final report is due at the end of March 2026 and the abstract from the final report will be available on the OMRF website www.omrf.org.nz. The funded project is summarised below.

Assoc Prof Mike Garratt

(Department of Anatomy, School of Biomedical Sciences, University of Otago)

Co-investigators: Assoc Prof Tracy Perry, Division of Sciences; Prof Sue Crengle, Ngāi Tahu Māori Health Research Unit; and Cameron Young, Department of Anatomy, School of Biomedical Sciences, University of Otago

Maternal diet and long-term effects on maternal and offspring health

Gestational diabetes (GDM) is a metabolic disease spontaneously arising during pregnancy and affects approximately 7% of all pregnancies in New Zealand. Although GDM typically resolves after pregnancy, it has long-lasting impacts on the health of mother and child, increasing their risk of metabolic and cardiovascular disease in later life. Maternal nutrition is a major factor influencing both the onset of GDM and its postpartum disease progression, although the effects of specific macronutrients (protein, carbohydrate, fat) have not been systematically assessed. This large-scale animal experiment will conclusively define the effect of specific macronutrient intake during pregnancy on the longterm health of mothers and their offspring.

JACK THOMSON ARTHRITIS FUND

This OMRF fund was established in 2011 and was made possible by a bequest from the late Jack Thomson. In December 2024 there were four applications requesting \$144,710, with one grant being funded (\$40,000). The final report is due at the end of March 2026 and the abstract from the final report will be available on the OMRF website www.omrf.org.nz. The funded project is summarised below.

Dr Adele Woolley

(Department of Pathology, Dunedin School of Medicine, University of Otago)

Co-investigators: Prof Lisa Stamp, Department of Medicine, University of Otago Christchurch; Prof Simon Stebbings, Department of Medicine, Dunedin School of Medicine; and Fraser Harrold, Department of Surgical Sciences, Dunedin School of Medicine, University of Otago

Identifying pro-inflammatory biomarkers for osteoarthritis

Osteoarthritis (OA) affects over half a million New Zealanders and represents a diverse spectrum of pathological processes culminating in joint damage and loss of function. Recent research has highlighted an inflammatory type of OA, suggesting potential for repurposing existing therapies to target early inflammation. Currently, identifying patients with inflammatory OA typically relies on imaging modalities such as ultrasound or MRI, which are resource-intensive and impractical for widespread screening. Developing a cost-effective biomarker for early inflammatory OA could revolutionise diagnostic and treatment approaches, enabling timely intervention and preventing irreversible joint damage. This project builds on pilot data, potentially identifying pathways for targeted interventions based on inflammatory cytokine signatures.

“This research has continued to fuel my desire to make a difference for families who face the realities of neurodegenerative conditions every day”

- Luke Geddes
2025 Renshaw Prize winner

4. OTHER ACTIVITIES OF THE SCIENTIFIC COMMITTEE

OMRF Student Speaker Awards at the Otago Medical School Research Society:

The Student Speaker awards are given to the student speakers who, in the opinion of a panel of three to four judges, gives the best and second best oral presentation – based on both the components of the presentation and its scientific merit. To be eligible the candidates must report work that has been performed under the auspices of the University of Otago.

At the **14th August 2024** scientific meeting of the Otago Medical School Research Society (OMSRS) there were 10 doctoral candidates. The first Prize (\$500) was funded by the Otago Medical Research Foundation. This year's winner was **Sara Crellin** (Department of Physiology, School of Biomedical Sciences), for her talk entitled "Novel therapeutic targets in the treatment of bipolar disorder".

At the **16th April 2025** scientific meeting of the OMSRS there were 10 summer research scholars selected to give presentations of their projects. The first Prize (\$500) was funded by the Otago Medical Research Foundation. Since 2015 the OMRF summer research prizes have been called "The Pat Cragg Summer Scholar Speaker Prizes" in recognition of the long-standing involvement by Professor Pat Cragg in the summer research scholarship assessing committee and was awarded to **Kai Shira Woolf** from the Department of Physiology, School of Biomedical Sciences (talk entitled: "Selective activation of hypothalamic stress neurons is sufficient to induce physiological dysfunctions associated with chronic stress").

OTAGO AURORA SCIENCE & TECHNOLOGY FAIR (12-13 August 2024):

The Foundation sponsors awards (\$50 each) for "Excellence in presentation for medically orientated topics". This year the OMRF judges were Assoc Prof Heather Cunliffe and Dr Nick Heng.

- Sleep and emotional wellbeing in adolescents: An intercontinental study, by Megha Senthilkumar, St Hilda's Collegiate (Year 12)
- Everybody Hertz, by Jack Orlovitch and Edward Chanalet-Quercy, Balmacewan Intermediate (Year 8)
- Heartbeat Hustle, by Lara Lowe and Sophie Wellington, Columba College (Year 8)
- Ouch my ears, by Tess Lawrence and Isobel Reynolds-Strong, Tahuna Normal Intermediate (Year 7)

ACKNOWLEDGEMENTS

The Foundation continues to play an important role in funding medical research in Otago. The last few years have especially highlighted the need for sustained and rapidly responsive medical research capacity.

I wish to thank the members of the Scientific Committee for their dedicated efforts in carefully assessing the merits of the large number of summer research projects and grant applications that were received by the Foundation over the last year. We thank the Council of the Foundation for the support, advice and enthusiasm with which our funding recommendations are endorsed. Finally, we wish to express our deep gratitude to the many Benefactors and Sponsors of the Foundation whose financial support has made all this possible.

Professor Gregory T. Jones

*Chair of the OMRF Scientific Committee
18 August 2025*



FINANCIAL HIGHLIGHTS

Otago Medical Research Foundation Inc.

Otago Medical Research Foundation Inc.

Financial Highlights

For the Year ended 31 March 2025

Reporting Entity

Otago Medical Research Foundation Inc. is an Incorporated Society in New Zealand and is incorporated under the Incorporated Societies Act 2022 and the Charities Act 2025 (CC33444).

Basis of Preparation

The summary performance and financial report have been extracted from the full performance and financial report of the Foundation for the year ended 31 March 2025, that were authorised for issue by the Council on 5 August 2025. The auditors expressed an unmodified audit opinion on the full performance and financial report on that date. The full performance and financial report has been prepared in accordance with Tier 3 PBE Accounting Standards.

The summary performance and financial report has been prepared in accordance with PBE FRS 43 Summary Financial Statements. The summary performance and financial report cannot be expected to provide a complete understanding as that provided by the full performance and financial report.

A full copy of the audited financial report for the Otago Medical Research Foundation Incorporated for the year ended 31 March 2025 is available from the office of the Foundations administrators - Deloitte, Otago House, 481 Moray Place, Dunedin.

Statement of Financial Performance

For the Year ended 31 March 2025

	2025	2024
	\$	\$
Operating Income		
Donations, Bequests, Subscriptions	492,006	425,744
Investment Income	222,086	214,753
Gain on Disposal of Investments	24,889	-
	738,981	640,497
Less Expenses		
Administration	189,903	107,480
Promotion Costs	262,061	318,253
Total Expenses	451,964	425,733
Net Surplus before Research Grants	287,018	214,764
Research Grants approved during the	376,133	370,057
Net deficit for the year	(89,116)	(155,293)

Statement of Financial Position

As at 31 March 2025

	Market Value	2025	2024
		\$	\$
Current Assets		237,725	162,914
Investments	5,728,893	4,169,340	4,269,605
Total Assets		4,407,065	4,432,519
Current Liabilities		179,853	116,191
Total Liabilities		179,853	116,191
NET ASSETS (EQUITY)		4,227,212	4,316,328



Statement of Cash Flows

For the Year ended 31 March 2025

	2025	2024
	\$	\$
Net Cash Flows from Operating Activities	(45,019)	(71,723)
Net Cash Flows from Investing Activities	124,886	5,998
Net Increase / (Decrease) in Cash Held	79,867	(65,725)
Cash at the Beginning of the Year	103,618	169,344
Cash at the End of the Year	183,485	103,618

Statement of Service Performance

For the Year ended 31 March 2025

The Foundation aims to establish world-class medical research for the benefit of local, national and international health.

The Foundation has provided a calendar of events in which members, supporters and the public were invited to participate - the Club lunches, annual dinner, annual golf day, and various other one-off events.

Grants & Scholarships approved during the year:

	2025		2024	
	Actual	Budget	Actual	
	#	\$	#	\$
Annual Grants	7	236,419	4	121,889
Special Fund Grants	2	72,574	3	67,359
Summer Research Scholarships	11	66,000	17	104,000
Otago Medical Research Society				
Award Sponsorship	2	1,200	4	1,200
Total	22	376,193	28	294,448

For and on behalf of the Otago Medical Research Foundation Incorporated Council who authorised the issue of these summary financial statements on 5 August 2025.

Prof Pat Cragg
Chair



AUDITOR'S REPORT



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Invercargill 9840 New Zealand
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REPORT OF THE INDEPENDENT AUDITOR ON THE SUMMARY FINANCIAL STATEMENTS

To the Council Members of Otago Medical Research Foundation Incorporated

Opinion

The summary financial statements, which comprise the summary statement of financial position as at 31 March 2025, the summary statement of service performance, the performance summary statement of financial performance and the summary statement of cash flows for the year then ended, and related notes, are derived from the audited financial statements of Otago Medical Research Foundation Inc. (the "Foundation") for the year ended 31 March 2025.

In our opinion, the accompanying summary financial statements are consistent, in all material respects, with the audited financial statements, in accordance with FRS-43: *Summary Financial Statements* issued by the New Zealand Accounting Standards Board.

Summary Financial Statements

The summary financial statements do not contain all the disclosures required by Tier 3 Not-for-Profit Entities. Reading the summary financial statements and the auditor's report thereon, therefore, is not a substitute for reading the audited financial statements and the auditor's report thereon. The summary financial statements and the audited financial statements do not reflect the effects of events that occurred subsequent to the date of our report on the audited financial statements.

The Audited Financial Statements and Our Report Thereon

We expressed an unmodified audit opinion on the audited financial statements in our report dated 5 August 2025.

Council's Responsibility for the Summary Financial Statements

The Council are responsible on behalf of the entity for the preparation of the summary financial statements in accordance with FRS-43: *Summary Financial Statements*.

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Auditor's Responsibility

Our responsibility is to express an opinion on whether the summary financial statements are consistent, in all material respects, with the audited financial statements based on our procedures, which were conducted in accordance with International Standard on Auditing (New Zealand) (ISA (NZ)) 810 (Revised), *Engagements to Report on Summary Financial Statements*.

Other than in our capacity as auditor we have no relationship with, or interests in, the Foundation.

A handwritten signature in blue ink that reads "Crowe".

Crowe New Zealand Audit Partnership

CHARTERED ACCOUNTANTS

Dated at Dunedin this 5th day of August 2025

The title 'Partner' conveys that the person is a senior member within their respective division and is among the group of persons who hold an equity interest (shareholder) in its parent entity, Findex Group Limited. The only professional service offering which is conducted by a partnership is the Crowe Australasia external audit division. All other professional services offered by Findex Group Limited are conducted by a privately-owned organisation and/or its subsidiaries.

Charities Number: CC33444

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