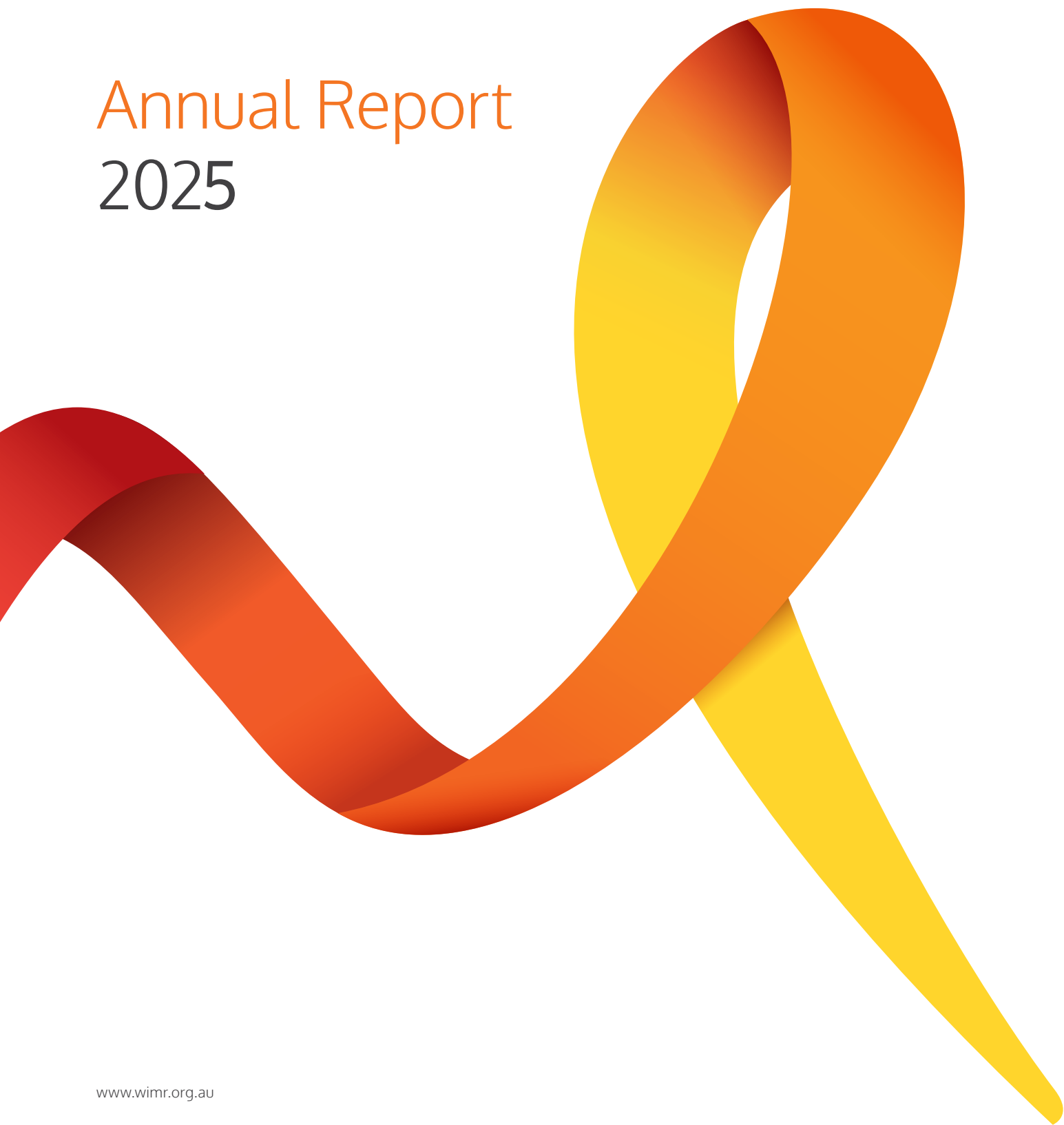




Annual Report 2025



A woman with dark hair, wearing a white lab coat and yellow gloves, is working in a laboratory. She is looking up and to the right, with her hands raised as if holding or examining something. The background is a blurred laboratory setting with various equipment.

Acknowledgement of country

WIMR acknowledges the Darug people who are the traditional custodians of the lands and waterways in Westmead. WIMR pays respect to Elders past, present and emerging and celebrates the diversity of Aboriginal peoples and their ongoing culture and connection to the land and water.

Contents

About the Institute	02
Message from the Chair	04
Message from the Executive Director	06
Research & Innovation	07
Diseases & conditions	09
Impact Story - Beverley	10
Areas of Expertise	12
Innovation	14
Industry Collaborations	15
Technology that Transfers Lives	16
AI Enabled Precision Medicine	18
Publications	20
Our Clinical Network	22
Impact Story - Michael	25
Our People & Culture	26
Impact Story - A second chance through research	28
Research centres & groups	31
Funding & Awards	32
Grants and awards	33
Financials	36
Board of Directors	37
Financials	38

About the Institute

At WIMR we are committed to scaling the promise of precision medicine, ensuring that groundbreaking research transforms into real world impact through our clinical partnerships and connection to Western Sydney.

A rare alignment of assets and capability to leverage:



Pursuing the full potential of Precision Medicine

At the Westmead Institute for Medical Research (WIMR), we focus on tackling real-world health challenges through research that leads to tangible clinical outcomes. Our work spans cancer, diabetes, cardiovascular disease, infectious diseases, autoimmune disorders, and neurological conditions, with the goal of turning scientific breakthroughs into treatments that improve lives.

We specialise in precision medicine, leveraging advanced technologies such as gene and cell therapies, bacteriophage and plasmid therapies, islet transplantation, bioinformatics, regenerative medicine, and genomics. Our discoveries progress to first-in-human clinical trials through partnerships with the Westmead Health Precinct and national collaborators, ensuring rapid translation into patient care. Beyond the clinic, we work closely with industry partners to bridge gaps in healthcare, ensuring that new therapies and innovations reach those who need them most, on a global scale.

World-Class Facilities Driving Discovery

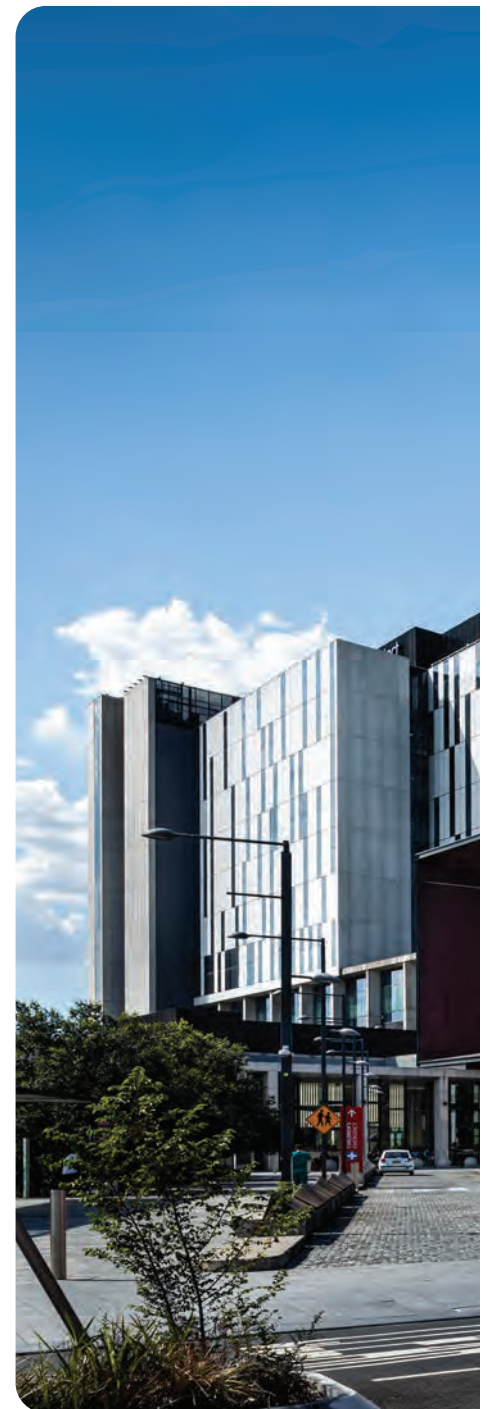
We are privileged to operate within a purpose-built, world-class research facility in Western Sydney, equipped with state-of-the-art scientific infrastructure. These resources enable high-impact research, not only for our own scientists but also for researchers across Australia who rely on our facilities to conduct breakthrough studies.

At any given time, WIMR is home to over 450 of Australia's leading research professionals — including scientists, clinician-researchers, professional staff, and research students — all working to push the boundaries of medical innovation. We also welcome local and international collaborators, who use our institute as a hub for critical problem-solving in some of the most pressing areas of medical research.

A Unique Global Perspective

Our home in Western Sydney, a globally diverse community, gives us a unique advantage. By engaging with this representative population, we develop solutions that are effective both locally and globally, helping to bridge healthcare gaps and improve access to life-changing treatments. Through strong collaborations with clinicians, hospitals, and industry leaders, we ensure that new therapies, diagnostics, and medical innovations are not only tested but actively scaled to benefit patients worldwide.

At WIMR, we are committed to scaling the promise of precision medicine—ensuring that groundbreaking research transforms into real-world impact. By advancing healthcare, we are driving meaningful change for communities locally and across the globe.



“The direct connection between research and patient care is what drives me to find solutions to the challenges I see in the clinic daily.”

Associate Professor Emily Blyth, Blood Transplant & Cell Therapies Group





Message from the Chair

The Westmead Institute for Medical Research plays a vital role in one of Australia's most important health and research ecosystems. Located in the heart of Western Sydney, WIMR sits alongside hospitals, universities and industry partners within the Westmead Health Precinct - creating an environment where research, clinical care and innovation come together to improve lives.

Western Sydney is one of the most diverse communities in the world. This diversity provides a unique opportunity for WIMR researchers to develop insights and solutions that are relevant both locally and globally. By working closely with clinicians and health services across the precinct, discoveries can move quickly from the laboratory to the patients who need them.

Over the past year the Institute has continued to strengthen its role within this ecosystem - supporting researchers with advanced technologies, fostering collaboration across institutions and contributing to the broader research capability of the region.

The Westmead Health Precinct continues to grow as a centre for health, research and economic development, and WIMR is proud to play a central role in this progress.

I would like to thank my fellow Board members for their guidance and stewardship over the past year. I would also like to acknowledge Professor Phillip O'Connell and the entire WIMR team for their leadership and dedication.

Finally, I would like to thank our donors and supporters whose generosity continues to enable research that improves the health and wellbeing of communities in Western Sydney and beyond.

Michael Rose AM
Chair, WIMR Board



Message from the Executive Director

At WIMR our focus is clear: translating scientific discovery into better outcomes for patients.

Over many years we have built the foundations to pursue this goal - attracting world class researchers, investing in advanced technologies and working closely with clinicians across the Westmead Health Precinct and beyond. This integrated environment enables discoveries to move more rapidly from the laboratory to clinical application.

A major step forward has been the development of PrecisionGO, a national precision medicine platform integrating genomics, imaging, bioinformatics and clinical data to support researchers in Australia.

Through this platform, WIMR is helping accelerate the adoption of precision medicine approaches that enable more accurate diagnosis and more effective treatments.

We are now entering a new phase. Advances in data science and artificial intelligence are transforming how we analyse complex biological systems and large clinical datasets. Combined with our strengths in genomics, clinical research and access to diverse patient populations, these capabilities position WIMR to help lead the next era of precision medicine.

This work is strengthened by our partnership with Western Sydney Local Health District and the University of Sydney, ensuring our research remains closely aligned with clinical priorities and patient need. It also reflects the dedication of our researchers and staff, the strength of our collaborations across the precinct, and the continued support of our donors and partners.

Together, we are building the knowledge and technologies that will shape the future of healthcare.

Sincerely,

Professor Philip O'Connell
Executive Director,
Westmead Institute for Medical
Research



Research & innovation



Diseases & conditions

Cancer

- Leukemia
- Lymphoma
- Breast cancer
- Liver cancer
- Ovarian cancer
- Melanoma
- Skin cancer
- Brain cancer (including high-grade gliomas)
- Head and neck cancer
- Sarcoma (soft tissue cancers)
- Colorectal cancer

Autoimmune and Inflammatory Disorders

- Multiple sclerosis
- Lupus
- Inflammatory bowel disease (Crohn's disease, ulcerative colitis)
- Rheumatoid arthritis
- Amyloidosis
- Coeliac disease
- Immune-mediated neurological disorders

Metabolic and Liver Diseases

- Fatty liver disease (including non-alcoholic fatty liver disease)
- Liver fibrosis
- Cirrhosis
- Diabetes (Type 1 & Type 2)
- Obesity-related liver conditions

Ophthalmology

- Age-related macular degeneration
- Diabetic retinopathy
- Retinal vascular diseases
- Corneal diseases and injuries
- Glaucoma

Cardiovascular & Respiratory Diseases

- Heart rhythm disorders
- Heart failure
- Myocardial infarction recovery
- Hypertension
- Asthma
- Chronic obstructive pulmonary disease (COPD)
- Pulmonary fibrosis

Neurological and Mental Health Disorders

- Schizophrenia
- Post-Traumatic Stress Disorder (PTSD)
- Prolonged Grief Disorder
- Eating disorders
- Autism spectrum disorder
- Alzheimer's disease
- Glaucoma
- Psychosis

Infectious Diseases

- HIV/AIDS
- Hepatitis B and C
- COVID-19
- Antibiotic-resistant bacterial infections

Kidney Diseases

- Polycystic kidney disease
- Chronic kidney disease
- Acute kidney injury
- Renal fibrosis
- Kidney Transplantation

Blood and Immune Disorders

- Immunodeficiencies
- Autoimmune diseases (various)
- Graft-versus-host disease
- Hematological malignancies

IMPACT STORY

Beverley finds hope in liver research

“For patients like me, research means possibility. It means a future where cirrhosis might be treatable, or even reversible.”

Beverley Ryan

At 61, Beverley Ryan never expected a routine blood test to change her life.

With no physical symptoms, Bev was shocked to be diagnosed with early-stage liver cirrhosis in August 2024. She was referred to Professor Jacob George at the Storr Liver Centre, where she has remained under specialist care ever since.

“The word cirrhosis is confronting,” Bev says. “You’re told it’s irreversible, and suddenly you’re thinking about your life expectancy and how to slow the damage.”

A disability support worker with a large blended family, Bev describes the diagnosis as turning her world upside down. Determined to take control of her health, she made immediate and dramatic lifestyle changes. She adopted a strict plant-based diet, gave up alcohol completely, began walking up to 20,000 steps a day, and carefully managed her medications. Within three months, she had lost 25 kilograms.

While the physical changes have been positive, the emotional toll has been significant.

“The hardest part is the uncertainty, and the social side of food and going out,” she says. “You feel different from everyone else.”

For Bev, research offers hope, not just for herself but for the many Australians unknowingly living with fatty liver disease.

At WIMR’s Storr Liver Centre, researchers are working to better understand liver disease and liver cancer, with a strong focus on conditions including fatty liver disease, liver fibrosis and liver cancer. The centre is led by Professor Jacob George and brings together research that spans from bench to bedside.

That hope is now being strengthened by the Snow Program for Liver Health, a seven-year, \$15.5 million national research program headquartered at the Storr Liver Centre at the Westmead Institute for Medical Research. Backed by the Snow Medical Research Foundation, the program is designed to fast-track breakthroughs in diagnosis, treatment and prevention for metabolic dysfunction-associated fatty liver disease, which affects about one in three Australian adults.

By bringing together leading researchers and clinicians from across Australia, the program aims to improve understanding of why liver disease progresses in some people and not others, with the goal of enabling earlier detection, better treatments and improved quality of life for patients.

“For patients like me, research means possibility,” Bev says. “It means a future where cirrhosis might be treatable, or even reversible.”



Areas of expertise

Cancer

- CAR T Cell Therapy: Leveraging engineered T cells to target and destroy blood cancers like leukemia and lymphoma.
- Targeted Therapies: Identification of molecular drivers in cancers such as ovarian, breast, and liver cancers for personalized treatments.
- Translational oncology and clinical trials across head and neck, sarcoma and colorectal cancers, including survivorship and equity-focused care
- Radiation biology and radiosensitisation strategies targeting therapy-resistant brain tumours

Immunotherapy

- Cancer vaccines to stimulate anti-tumor immune responses.
- Novel immune checkpoint inhibitors to improve treatment-resistant cancers.
- Mathematical Modelling: Modeling chemotherapy resistance to design optimized drug regimens.
- Precision Diagnostics: Genomic testing and histopathology to classify cancer subtypes.
- Bioengineering Tools: Developing organoid models for drug screening.

Neurological and Mental Health Disorders

- Neuroprotective Strategies: Identifying mechanisms to prevent retinal ganglion cell death in glaucoma.
- Cognitive Remediation: Programs to improve social cognition and employment outcomes in schizophrenia.
- Wearable eHealth Devices: The unWIRED Project for managing severe mental illness using real-time data collection.
- Psychological Interventions: Mindfulness-based cognitive behavioural therapy (CBT) for PTSD and prolonged grief.
- EEG Biomarkers: Developing tools like Electroencephalographic Markers of Inner Speech (EMIS) for psychosis diagnostics.

Cardiovascular Innovations

Gene Therapy

- Viral vectors delivering corrective genes for heart rhythm disorders.
- AAV-based therapies for myocardial repair.

Growth Factor Delivery

- PDGF-AB for scar mechanics improvement post-myocardial infarction.
- Tropoelastin to improve scar elasticity and heart function.
- Bioengineered Models: Testing cardiac therapeutics in small and large animal models.

Kidney Diseases

- Regenerative Medicine: BMP-7 engineered macrophages for chronic kidney disease.
- Novel Proteomic Biomarkers: Tools to predict disease progression in polycystic kidney disease.
- Machine Perfusion Technology: Reviving donor kidneys for transplantation.
- Cellular Signalling Modulation: Targeting pathways like TGF- β and Wnt/ β -catenin for kidney fibrosis therapy.
- Statistical bioinformatics and machine learning to analyse high-dimensional clinical and molecular data across transplantation and chronic disease.

Genomics Approaches

- Development of polygenic risk scores to predict late-stage kidney graft loss.
- Pan-organ transcriptomic atlases to identify biomarkers for kidney disease.
- Single-cell RNA sequencing to uncover molecular and cellular dynamics in kidney injury and fibrosis.

Diabetes Research

- Islet Transplantation: Developing protocols for islet cell transplantation to restore insulin production in Type 1 diabetes.
- Cellular Therapies: Exploring beta-cell regeneration and immune tolerance to preserve pancreatic function.

Infectious Diseases

- Phage Therapy: Developing bacteriophage-based treatments to combat antibiotic-resistant infections.
- Plasmid Therapy: Utilizing plasmids for genetic delivery in combating bacterial infections and resistance mechanisms.

Next-Generation Vaccines

- mRNA vaccines for infectious diseases like hepatitis B and HIV.
- Adjuvant studies using human lymph node explants to test immune activation.

Immunoinformatics

- Developing T-cell epitope-based vaccines for diseases like COVID-19 and HIV.
- Viral inhibition assays to assess therapeutic efficacy.

Antiviral Therapies

- Small-molecule inhibitors targeting viral replication in hepatitis and HIV.
- Novel zinc-mediated antiviral strategies.

HIV/AIDS

Cure Strategies

- Identifying viral reservoirs and their genetic makeup to develop eradication therapies.
- Immunoinformatics Analysis Pipeline (IMAP) for creating HIV-targeting mRNA vaccines.
- Latency Reversal Agents: Strategies to activate latent HIV for immune clearance.

Respiratory Diseases

- Novel Inhalation Therapies: Targeting airway remodelling in asthma and COPD.
- Anti-Fibrotic Approaches: Using biologics to reduce lung scarring in pulmonary fibrosis.

Immunology and Autoimmune Disorders

- Treg-Based Therapies: Antigen-specific regulatory T cells (Tregs) to prevent transplant rejection and autoimmune diseases like lupus.
- Dendritic Cell Vaccines: Harnessing tolerogenic dendritic cells to prevent acute kidney injury and in inflammatory bowel disease.
- High-Parameter Flow Cytometry: Tools to profile immune responses in diseases like lupus and Crohn's disease.
- Systems immunology and immunogenomics using AI to model T cell responses and guide immunotherapy development
- Single-cell genomics to identify pathogenic immune cell populations in autoimmune disease and cancer
- Computational modelling and bioinformatics to understand immune responses in infectious diseases

Ophthalmology

- Anti-Angiogenic Eye Drops: Novel glycoproteins to prevent abnormal blood vessel growth in diseases like macular degeneration.
- Corneal Glues: Innovative bioadhesives to seal perforated corneas.
- AI-Driven Diagnostics: Deep learning algorithms for optical coherence tomography (OCT) image analysis.

Vaccines and Adjuvants

- Lymph Node Explant Model: Testing vaccine efficacy in human lymphoid tissues.
- Multiple Dose Optimization: Improved immune response protocols for chronic conditions like chronic lymphocytic leukemia.

Liver and Metabolic Health

- FibroGene Diagnostic Tool: A non-invasive online calculator predicting liver fibrosis severity.

Gene Editing

- Targeting Interferon Lambda 3 (IFNL3) for personalized medicine in liver fibrosis.
- Using CRISPR-Cas9 for studying liver cancer genetics.

Liver Regeneration Therapies

- Vitamin D-based interventions for liver recovery.
- Stem cell-based treatments for end-stage liver disease.

Innovation

At WIMR we are committed to scaling the promise of precision medicine by partnering with industry to bring breakthrough therapies to the people who need them most.

Our expertise in gene and cell therapies, phage therapy, and precision diagnostics, combined with our state-of-the-art research infrastructure, makes us a premier partner for companies seeking to turn scientific discoveries into real-world healthcare solutions.

Why Industry Partners Choose WIMR

WIMR provides specialised capabilities that bridge the gap between research and clinical application, offering unique advantages that many companies cannot replicate in-house. These include:

- **Advanced Immunology & Infectious Disease Expertise** – Our ability to identify, validate, and manufacture targeted biological therapies, such as phage therapy and cell-based treatments, is attracting major pharmaceutical interest.
- **First-in-Human Clinical Translation** – Through the Westmead Health Precinct and national clinical trial networks, we help bring new treatments from the lab to patients faster, ensuring therapies are rigorously tested and safely implemented.
- **Live Human Tissue and Cell-Based Models** – Unlike traditional research models, our access to fresh patient-derived tissues and organoid technologies allows for more accurate drug validation, increasing the chances of success when treatments reach human trials.
- **Custom Contract Research** – We work with biotech and pharmaceutical companies to provide tailored preclinical and translational research services, helping businesses de-risk and advance their drug pipelines efficiently.

Strategic Partnerships Through World-Leading Research Facilities

WIMR is home to world-class scientific facilities that enable biotech, pharmaceutical, and medical technology collaborations. As part of the Westmead Research Hub (WRH), our specialised research infrastructure supports:

- **Genomics & Bioinformatics** – Advanced gene sequencing, AI-driven biomarker discovery, and personalised medicine applications.
- **High-Resolution Imaging & Flow Cytometry** – Cutting-edge microscopy and live-cell analysis technologies for drug discovery.
- **Clinical Biobanking & Histology** – Long-term patient sample storage and automated tissue analysis for preclinical and clinical research.
- **Proteomics & Structural Biology** – Mass spectrometry and protein engineering for vaccine and therapeutic development.

Our fee-for-service model makes these facilities accessible to industry partners, research institutions, and commercial users, ensuring that companies can leverage our expertise to accelerate their R&D efforts.

Partnering for Global Impact

By collaborating with biotech, pharma, and healthcare industry leaders, WIMR ensures that scientific breakthroughs translate into real-world healthcare solutions. Our expertise in precision medicine, access to first-in-human clinical trials, and world-class facilities make us an ideal partner for companies looking to drive innovation at scale.

At WIMR, innovation is impact, and we are dedicated to delivering life-changing healthcare solutions that improve patient outcomes worldwide.

Industry Collaborations



Innovative studies in human lymph nodes to improve vaccines

Effective vaccines are key to preventing severe disease, but many work less well in older adults and people with weakened immune systems. There are now a handful of vaccines that give an extra boost to the immune system of these people, providing excellent protection against shingles, respiratory syncytial virus (RSV) and COVID-19. Exactly why these vaccines work so well in older and immune compromised people is not entirely known and there are still imperfections such as side effects (shingles, RSV) and short-lived protection (COVID-19).

Professor Tony Cunningham and Dr Kerrie Sandgren have developed a novel way to study how vaccines interact with immune cells inside human lymph nodes, the “training grounds” for immune cells. Using thin slices of real human lymph node tissue, they can watch how these cells respond to vaccine components in the lab—something that is usually very hard to see directly.

This research is highly attractive to global vaccine companies, and GSK and Moderna are partnering with the research team at WIMR to better understand how their vaccines work. The goal is to design new vaccine formulations that keep the strong protection of current vaccines, but with fewer side effects and longer-lasting immunity.

Developing novel antiviral platforms and companion diagnostics for hepatitis B

Hepatitis B virus (HBV) infection affects nearly 300 million people worldwide and causes over 800,000 deaths each year, primarily from cirrhosis and liver cancer. Current standard-of-care therapies can suppress viral replication but rarely achieve a true cure, leaving a major unmet clinical and commercial need.

Dr. Thomas Tu's and Dr. Mark Douglas' research focus has been in advancing multiple first-in-class strategies to cure hepatitis B and reduce liver cancer risk, creating strong opportunities for commercial partnerships across therapeutics, diagnostics, and digital health. In one of the approaches, the team has discovered a host gene essential for trafficking a key viral protein; inhibiting this pathway disrupts immune evasion and may enable a functional cure. Together with other strategies, the research discoveries offer attractive licensing and co-development potential for biotech and pharmaceutical partners seeking novel antiviral platforms.

The team has also developed proprietary methods to support companion diagnostics, clinical trial stratification, and industry collaborations. The community engaged initiatives from the team further enhance trial readiness, real-world adoption, and translational impact.



Technology That Transforms Lives

PrecisionGo®: An Integrated Pipeline for Precision Medicine

Building on more than 20 years of investment in scientific platforms and infrastructure, PrecisionGo® is a flagship initiative supported by the Medical Research Future Fund (MRFF) that integrates advanced technologies, expertise and clinical partnerships into a single, end-to-end pipeline — accelerating the pathway from discovery to patient care.

Advances in genomics, spatial biology and data science are transforming how disease is understood and treated. However, realising the full potential of these advances requires more than individual technologies - it requires coordinated systems that can translate discovery into clinical impact.

From Discovery to Clinical Impact

PrecisionGo® is designed to support the full continuum of research:

- **Discovery** – advanced technologies generate deep biological insight and identify novel biomarkers
- **Screening and validation** – robust, automated workflows test findings across large patient cohorts
- **Clinical translation** – integration with clinical data and trials enables new diagnostics and therapies

This coordinated approach ensures that promising discoveries are not lost between stages, but instead progress efficiently toward clinical application.

"Integrated infrastructure is essential to accelerate the translation of discovery into patient-centred care." – Dr Maggie Wang, Director, Scientific Platforms



16

Advanced Platforms, Unified for Impact

A defining strength of PrecisionGo® is the calibre and integration of its scientific platforms. These capabilities operate as a unified system rather than standalone services, enabling researchers to move seamlessly from exploration to validation.

Key platforms include:

- **Single-cell multiomics** – enabling detailed analysis of cellular diversity and immune function
- **Whole-transcriptome spatial profiling** – revealing gene expression patterns across tissues
- **Targeted spatial analysis** – providing high-resolution validation of biological mechanisms

Together, these technologies provide complementary insight across multiple biological scales – from individual cells to tissue architecture – supporting both discovery science and translational research.



Expanding Capability: Cytex Aurora

During the year, WIMR strengthened its cytometry capability through the acquisition of the Cytex Aurora Full Spectrum Flow Cytometer.

This next-generation instrument enables researchers to analyse individual cells in exceptional detail, measuring dozens of biological markers simultaneously. Its full-spectrum technology allows complex experiments to be performed without repeated system reconfiguration, increasing both flexibility and efficiency.

With high sensitivity and resolution, the Aurora allows scientists to identify rare or previously undetectable cell populations - including those with low biomarker expression or high background signal. This capability is critical in areas such as cancer, immunology and infectious disease, where subtle cellular differences can have significant clinical implications.

Importantly, within the PrecisionGo® framework, cytometry data is integrated with genomic, spatial and clinical datasets - enabling a richer, multi-dimensional understanding of disease.

Scale Through Integration and Partnership

WIMR's strength lies not only in its technology, but in how these capabilities are integrated and embedded within a broader ecosystem.

- Since implementation in late 2024, PrecisionGo® has:
- Supported 23 completed projects, with 60 underway and 7 in development
- Enabled collaboration across 22 research and industry groups spanning 11 institutions
- Supported research across more than 30 disease areas, including cancer, cardiovascular disease and infectious diseases
- Contributed to national and international conference presentations, reflecting growing translational momentum
- Clinical integration within the Westmead Health Precinct, providing access to diverse patient populations
- Strong partnerships with NSW Health, the University of Sydney and national and international collaborators
- Shared digital infrastructure, enabling reuse of validated analytical workflows to improve efficiency and reproducibility

A rare alignment of science, technology and clinical access positions WIMR to deliver precision medicine at scale.

Leveraging Investment for Greater Impact

PrecisionGo® demonstrates how strategic investment can be amplified through integration.

At WIMR, funding does not support isolated projects - it strengthens a coordinated system that underpins multiple research programs simultaneously. By leveraging established infrastructure, partnerships and clinical access, each investment accelerates discovery, validation and translation across a broad portfolio.

This approach enables:

- Faster progression from discovery to clinical application
- Greater efficiency through shared platforms and workflows
- Increased scale across multiple disease areas
- Enhanced ability to attract leading collaborators

Positioning Westmead for the Future

Through PrecisionGo®, WIMR is helping to define a new model for precision medicine — one that is integrated, scalable and clinically embedded.

By combining advanced scientific platforms, deep clinical integration and strong partnerships, WIMR has established a distinct capability to translate discovery into improved patient outcomes.

As investment continues, this model will further expand, strengthening Australia's capacity to deliver world-class, patient-centred medical research and ensuring that discoveries made at Westmead translate into meaningful improvements in health outcomes locally and globally.

"PrecisionGo® transforms fragmented research into a coordinated pipeline - accelerating the path from discovery to patient impact." - Maggie Wang, Director, Scientific Platforms



Case for support

AI Enabled Precision Medicine

Transforming the future of healthcare

“This High-Performance Computing Centre in Western Sydney will accelerate medical discovery and bring treatments to patients faster.”

Professor Philip O’Connell, Executive Director

Why Now? The Urgent Need for High-Performance Computing

WIMR is working in a research environment where AI, genomics, imaging and large-scale patient data are transforming how disease is understood at the individual level. High-performance computing is what allows us to securely process and analyse this complexity at speed, turning large and diverse datasets into clinically meaningful insight. Rather than preparing for a future shift, we are already operating in that shift — using advanced computational capability to support precision medicine discovery and translation.

Examples:

- WIMR is already leveraging open-source AI tools for protein-folding prediction in work led by Fabio Luciani.
- PrecisionGO is already integrating genomics, bioinformatics and data science to accelerate precision medicine at the clinical interface.
- The scale of current research already includes major RNA-seq, single-cell and spatial transcriptomics workloads that require substantial storage and compute capacity.

Our Next Generation of Research Leaders Are Already Paving the Way

WIMR’s emerging and established researchers are already applying AI, machine learning and advanced computational methods across immunology, virology, transplantation and neurodegeneration. This leadership is being strengthened through deliberate investment in outstanding talent and through the Digital Research Skills Network, which is actively building AI and data science capability across the institute. Together, these researchers are not only adopting new technologies — they are helping define how they are applied in precision medicine research.

Examples:

- Thomas O’Neill is using Python-based pipelines and machine-learning tools to map early HIV and HSV immune responses.
- Professor Fabio Luciani is applying bioinformatics and machine learning to identify immune targets for new immunotherapies, including vaccines and CAR T-cell therapies.
- Manu Singh is using machine learning to advance single-cell genomics research in autoimmune disease.
- The Digital Research Skills Network is delivering seminars, workshops and coding clubs in tools such as R, Python and data visualisation.





The Impact: Faster, Smarter, More Precise Medical Innovation

WIMR is using AI-enabled precision medicine technologies to accelerate discovery and improve how disease is diagnosed, understood and treated. By combining advanced platforms, computational analysis and clinical translation, we are generating faster insights, supporting more precise treatment decisions and strengthening long-term capability in genomics, AI and data-driven medicine. The impact is not theoretical — it is already visible in the way researchers are classifying immune responses, analysing pathology, and identifying earlier signals of disease and treatment response.

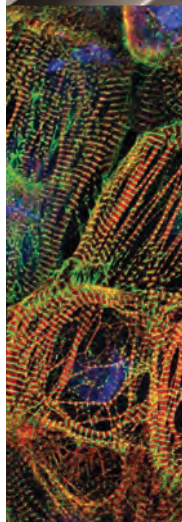
Examples:

- Rhapsody is being used to track and classify immune cells in cancer patients following immunotherapy.
- Xenium is being used to investigate how the immune system responds to novel vaccine adjuvants.
- Visium HD is helping identify molecular signatures of early transplant rejection.
- Renal-Agent is analysing kidney biopsy slides and multimodal data to support transplant pathology reporting in minutes rather than much longer manual workflows.

Your Support Will Drive Medical Breakthroughs

WIMR is uniquely positioned to maximise the impact of a High-Performance Computing Centre, with strong links to clinicians, hospitals, and global research partners. However, to make this vision a reality, we need philanthropic support to secure the technology and expertise required.

By donating to the High-Performance Computing Centre, you will play a direct role in revolutionising how medical research is conducted, accelerating the journey from discovery to real-world treatment.



“We are on the cusp of a transformative era in precision medicine - where advanced high-performance computing and data-driven research converge to unlock revolutionary possibilities in patient care”

Thomas O'Neill, Postdoctoral Researcher, Centre for Virus Research



Publications

Research publications in respected peer-reviewed journals are a critical measure of impact in medical research.

They provide rigorous, peer-reviewed evidence of scientific advancements, underpinning our ability to secure nationally and internationally competitive funding and driving career progression for research leadership.

The abstracts of the publications below are available in the public domain and represent a selection of over 335 peer-reviewed studies published this year, including 154 with our researchers as first or last authors.

This body of work demonstrates our strengths in precision medicine, interdisciplinary collaboration, and translational research –ensuring our discoveries lead to real-world health improvements.

Brain Dynamics Centre

Title: The neural connectome of suicidality in adults with mood and anxiety disorders
Journal: Nature Mental Health

Title: Heat and mental health
Journal: Australian Journal of General Practice

Title: Gamma and theta/alpha-band oscillations in the electroencephalogram distinguish the content of inner speech
Journal: eNeuro

Title: Altered self-processing brain networks in paediatric functional neurological disorder
Journal: Neurolmage: Clinical

Title: fMRI neurofeedback for the modulation of neural networks associated with depression
Journal: Clinical Neurophysiology

Title: Default mode network connectivity differentiates treatment-resistant depression
Journal: Neurolmage: Clinical

Title: Behavioural intervention to reduce psychological distress in adolescent refugees
Journal: Epidemiology and Psychiatric Sciences

Title: Neurofeedback combined with trauma counselling for treatment-resistant PTSD
Journal: Psychological Trauma

Title: Recovery of orientation after ECT: a care network study
Journal: Journal of Affective Disorders

Title: Memory specificity training to augment PTSD therapy: a randomised controlled trial
Journal: World Psychiatry

Centre for Cancer Research

Title: Radiotherapy improves survival in NSCLC after oligoprogression on immunotherapy
Journal: JTO Clinical and Research Reports

Title: Proteomic integrity of tape-stripped skin samples under elevated temperatures
Journal: Journal of Proteomics

Title: Immune checkpoint inhibitors in NSCLC with brain metastases: systematic review
Journal: Thoracic Cancer

Title: CAR-T cell therapy management in multiple myeloma: Australian consensus
Journal: Frontiers in Oncology

Title: Proteomic and imaging integration for melanoma classification
Journal: Journal of Investigative Dermatology

Title: Biomarker discovery in ovarian cancer through proteomic analysis
Journal: NPJ Precision Oncology

Title: Radiosensitisation strategies for diffuse intrinsic pontine glioma
Journal: Neuro-Oncology

Centre for Diabetes Obesity & Endocrinology

Title: Cognition and quality of life in diabetes-related foot ulcers
Journal: Journal of Tissue Viability

Title: Micronutrient deficiencies in patients with active foot ulceration
Journal: Advances in Wound Care

Title: β -cell susceptibility following HIF-1 α deletion
Journal: International Journal of Molecular Sciences

Title: Ketogenic interventions for polycystic kidney disease
Journal: Nutrients

Title: β -cells: sensitivity and function
Journal: Diabetes

Title: NF gene therapy: hurdles and opportunities
Journal: Molecular Therapy – Nucleic Acids

Title: Hyperglycaemia following immune checkpoint inhibitor therapy
Journal: Journal for Immunotherapy of Cancer

Title: Enzyme replacement therapy for hypophosphatasia
Journal: Clinical Endocrinology

Title: Vitamin D receptor regulation of liver regeneration
Journal: Endocrinology

Centre for Heart Research

Title: PDGF-AB modulation improves post-infarct cardiac function
Journal: Heart, Lung and Circulation

Title: Pulsed-field ablation in atrial fibrillation with device implantation
Journal: Heart, Lung and Circulation

Title: Cell death mechanisms in myocardial ischaemia–reperfusion injury
Journal: International Journal of Molecular Sciences

Title: Radiation therapy and cardiac arrhythmias: mechanisms and gaps
Journal: International Journal of Radiation Oncology

Title: MRI and electroanatomic assessment of post-infarction cardiac scar
Journal: Circulation: Arrhythmia and Electrophysiology

Title: Machine learning prediction of ventricular scar topography
Journal: Circulation: Arrhythmia and Electrophysiology

Centre for Immunology & Allergy Research

Title: Early-onset Sjögren disease in diverse populations
Journal: Internal Medicine Journal

Title: Rituximab in refractory mucous membrane pemphigoid
Journal: Australasian Journal of Dermatology

Title: Immunoprecipitation assays in modern immunology laboratories
Journal: Pathology

Title: Contact anaphylaxis associated with moisturiser use
Journal: Allergy, Asthma and Clinical Immunology

Title: Anti-dsDNA immunoglobulin subfamilies in SLE
Journal: Autoimmunity

Title: Self-reactive B cells across Sjögren disease development
Journal: Immunology and Cell Biology

Title: Dementia prediction models using clinical cohorts

Journal: Translational Psychiatry

Title: GDF15 as a biomarker in neurodegeneration

Journal: Frontiers in Immunology

Title: IFI27 as a precision medicine target

Journal: Trends in Immunology

Title: Immune proteomic signatures in APOE ε4 carriers

Journal: Nature Medicine

Centre for Infectious Diseases & Microbiology

Title: Novel antifungal purine analogues targeting IP3-4K

Journal: ACS Infectious Diseases

Title: Safety and tolerability of bronchoscopic and nebulised administration of bacteriophage

Journal: Virus Research

Title: Phage recognition and immunogenicity drive divergent immune responses to E. coli and K. pneumoniae

Journal: European journal of immunology

Title: Novel purine analogues with enhanced antifungal activity targeting IP3-4K

Journal: ACS infectious diseases

Centre for Transplant & Renal Research

Title: Kidney exchange programs and transplant outcomes

Journal: CJASN

Title: Nanoparticle delivery systems for renal carcinoma

Journal: Nanoscale Advances

Title: Metabolic outcomes following pancreas–kidney transplantation

Journal: Transplantation

Title: Xenotransplantation: global position paper

Journal: Transplantation

Title: Water intake and quality of life in ADPKD

Journal: Clinical Kidney Journal

Title: Dialysis initiation and long-term outcomes

Journal: Kidney International Reports

Title: Nitrate supplementation in ADPKD: randomised trial

Journal: Kidney International Reports

Title: Cardiovascular screening in ADPKD

Journal: Kidney International Reports

Title: Dialysis quality framework in low-resource settings

Journal: Kidney International Reports

Title: CD47 signalling in islet stress responses

Journal: Diabetologia

Title: CAR macrophages targeting inflammation

Journal: Nature Biomedical Engineering

Centre for Vision Research

Title: Multimodal intervention for caregivers of AMD patients

Journal: Cureus

Title: Multifocal intraocular lens pathway outcomes

Journal: Clinical Ophthalmology

Title: Toric lens allocation pathway outcomes

Journal: BMC Ophthalmology

Title: Retinal vessel calibre as a biomarker in diabetes

Journal: Journal of Diabetes and Metabolic Disorders

Title: Cataract surgery outcomes in Australia

Journal: BMJ Open Ophthalmology

Title: Fenofibrate trial for diabetic macular oedema

Journal: BMJ Open

Title: AMD and mortality in high-risk cohorts

Journal: Ophthalmology Retina

Title: Diabetic retinopathy and cardiovascular mortality risk

Journal: Scientific Reports

Centre for Virus Research

Title: Immunisation strategies for herpes zoster

Journal: Human Vaccines and Immunotherapeutics

Title: HSV infection and spread in human tissue models

Journal: Viruses

Title: Dendritic cells in HIV infection

Journal: Viruses

Title: Astrovirus host expansion in avian species

Journal: Viruses

Title: Global impact of recombinant zoster vaccine uptake

Journal: Infectious Diseases and Therapy

Title: Spatial biology of HIV infection

Journal: PLOS Pathogens

Title: HSV infection in corneal models

Journal: PLOS Pathogens

Title: Omicron vaccine booster immune response

Journal: EBioMedicine

Title: Innate immune activation in lymph node explants

Journal: Journal of Clinical Investigation

Respiratory Research

Title: Post-COVID-19 intrapulmonary shunt and dead space

Journal: Journal of Applied Physiology

Storr Liver Centre

Title: Best practices for engaging affected communities in hepatitis B

Journal: Infectious Diseases of Poverty

Title: ctDNA liquid biopsy in hepatocellular carcinoma

Journal: Current Oncology Reports

Title: CAR as tumour suppressor in liver cancer

Journal: Scientific Reports

Title: Phage immunogenicity in bacterial infections

Journal: European Journal of Immunology

Title: Biomarkers in gastric cancer progression

Journal: Frontiers in Oncology

Title: Telehealth and legal considerations in drug health services

Journal: Journal of Medical Internet Research

Title: HBV protein HBx in carcinogenesis

Journal: Viruses

Title: Genetics and epigenetics of HCV-related liver cancer

Journal: Hepatobiliary Surgery and Nutrition

Title: MAFLD prevalence and outcomes: global meta-analysis

Journal: Clinical and Molecular Hepatology

Title: AI and machine learning in hepatic encephalopathy prediction

Journal: Gastro Hep Advances

Title: Real-world effectiveness of COVID-19 therapeutics

Journal: Journal of Medical Virology

Title: Advances in MAFLD frameworks and clinical definitions

Journal: Hepatology International / Liver International

Our Clinical Network

Our clinical network

The Westmead Institute for Medical Research (WIMR) and Western Sydney Local Health District (WSLHD) share a deeply integrated partnership, translating cutting-edge research into tangible health benefits.

The seamless connection between researchers and clinicians ensures that medical innovations rapidly improve patient care.

“This seamless connection between patient care and research accelerates discoveries that directly benefit patients.”

Professor James Chong, Centre for Heart Research



Personalised Medicine: Immunology & Patient Diversity

Dr Ming-Wei Lin & A/Prof Joanne Reed

Immunology is highly complex, with no universal approach to treatment. Through collaboration with WIMR, clinicians at Westmead Hospital apply personalised medicine techniques to tailor immunosuppression strategies for individual patients. A/Prof Joanne Reed and her team employ advanced profiling methods, including flow cytometry, genomics, and spatial transcriptomics, to analyse immune responses at a cellular level. This approach reduces the reliance on broad-spectrum immunosuppression, minimising toxicity and improving patient outcomes.

“Clinicians at Westmead actively engage in research, ensuring our work remains clinically relevant. Regular discussions help us address real-world challenges rather than conducting research in isolation.” — A/Prof Joanne Reed

Dr. Ming-Wei Lin, an immunologist at WIMR, explains:

“The diversity at Westmead makes it a much more interesting and unique place for research. We’re not just studying monogenic diseases, but also cross-ethnic diseases like lupus and pemphigus, which present differently depending on genetic background.”

A/Prof Joanne Reed, a leading researcher in autoimmune diseases, adds:

“Autoimmune diseases like lupus tend to be more severe in minority populations. By working with diverse patients, we ensure our research is globally relevant and helps those most at risk.”



Harnessing Patient Data for Targeted Therapies

Professor David Gottlieb

For researchers like Professor David Gottlieb, access to patient material is invaluable. By studying real-world patient samples, his team refines treatments, delivering immediate clinical benefits.

Professor David Gottlieb, who focuses on bone marrow transplantation, highlights the challenges and opportunities of working with ethnically diverse patients:

"Many of our transplant patients come from small, ethnically diverse communities. We must carefully tailor treatments because they don't always respond in the same way as Caucasian patients. This pushes us to innovate and find solutions that work for everyone."

"Understanding patient-specific problems enables us to design targeted therapies that can directly enhance their quality of life." — Prof David Gottlieb

A/Prof Emily Blyth

A/Prof Emily Blyth emphasises the crucial link between WIMR and the hospital in translating research into clinical practice. Her team manufactures therapies at WIMR, which are then tested in clinical trials with patients at Westmead Hospital.

"The direct connection between research and patient care is what drives me to find solutions to the challenges I see in the clinic daily." — A/Prof Emily Blyth.

Surgical Innovation: Research in Practice

Pictured are Dr Monica Richard-Bell, Women's Health, Westmead Hospital, Dr Gustavo Scavuzzo, Junior Doctor in Obstetrics and Gynaecology, Westmead Hospital, Prof Andrew Harman & Dr Kirstie Bertram (WIMR)

Surgeons at Westmead rely on research to refine treatment approaches. By collaborating with WIMR, they ensure evidence-based advancements benefit patients immediately.

"Understanding how different treatments impact diverse populations is crucial to improving care." — Dr Monica Richard-Bell

"Research informs every aspect of our clinical practice, ensuring patients receive the most effective treatments." — Dr Gustavo Scavuzzo

Professor Andrew Harman, a key collaborator, highlights how clinical integration enhances surgical outcomes. His work on immune system regulation, initially focused on HIV, has evolved into pioneering research on Crohn's disease. By analysing human tissues rather than relying on animal models, his team has identified a missing cell type crucial for immune function.

"Our transition from in vitro research to human tissue studies has allowed us to uncover mechanisms that could pave the way for targeted therapies, significantly improving surgical outcomes." — Prof Andrew Harman

Finding Hope Through Research



“Research could have saved my life. Being on the clinical trial and receiving additional drugs that aren’t currently available might have made all the difference.

It’s reassuring to have someone who has your back. It gives you hope.”

Michael Twycross

When Michael was diagnosed with liver cancer during the height of COVID, he found his way to one of the team of clinical trial coordinators at Westmead Hospital.

Recognising the urgency of his situation, Fran swiftly connected Michael with Professor Jacob George, a renowned expert in liver disease and cancer at WIMR and Head of the Department of Gastroenterology & Hepatology at Westmead Hospital. Jacob’s team ensured that Michael’s surgery was arranged without delay.

Following the operation, Michael was placed on a clinical trial that concluded two years ago. So far, his results have been promising. Reflecting on his journey, he acknowledges that research may have saved his life. The clinical trial provided him access to treatments that weren’t yet widely available—an opportunity that could have made all the difference.

The trial which Michael participated in showed promising results, leading to a \$6 million NHMRC grant, Led by Professor George, to expand this research into a nationwide study across 13 hospitals in Australia. This next phase will help refine treatment approaches and improve outcomes for more patients.

This follows work which scientists at WIMR had been conducting to understand how the immune system interacts with liver cancer and identified markers that could predict how patients respond to new treatments. This work helped shape the IMbrave050 clinical trial that Michael participated in, which tested a combination of two immunotherapy drugs, atezolizumab and bevacizumab, to prevent liver cancer from returning after surgery.

For Michael, knowing that someone had his back gave him hope. Now, his story stands as a testament to the impact of research at WIMR — not just in individual lives, but in shaping the future of cancer treatment.

Our people & culture

WIMR is home to over 450 research professionals at any one time, including researchers, students, support service teams, collaborators, volunteers and visitors.

“At WIMR, our values are more than just words - they shape our culture, decisions and the way we work together.

I see them reflected daily, whether it's in the way our researchers collaborate, the support our teams provide one another, or the commitment to excellence in our work.

It's a privilege to be part of an organisation where integrity, excellence, and generosity of spirit are lived out at every level.”

Melinda Holder
Head of People and Culture



A second chance through research

In 2007, Ray Zhou was diagnosed with IgA nephropathy, a condition where his immune system mistakenly attacked his kidneys. Over time, his kidney function declined - from 100% to just 3% by early 2024. By then, dialysis was inevitable.

In 2007, Ray Zhou was diagnosed with IgA nephropathy, a condition where his immune system mistakenly attacked his kidneys. Over time, his kidney function declined — from 100% to just 3% by early 2024. By then, dialysis was inevitable.

Ray's journey took a turning point in 2015, when he was referred to Professor Natasha Rogers at Westmead Hospital. From that moment, she became his dedicated clinician, guiding him through the difficult years leading up to his transplant.

In March 2024, Ray was on the brink of a pre-dialysis transplant, but at the last moment, the opportunity fell through. He had to begin dialysis, continuing for six months before finally receiving a successful kidney transplant on September 17th. Now, three months post-surgery, he is off dialysis, regaining his strength, and getting back to exercise.

Ray's care shaped by WIMR research

Ray's care at Westmead Hospital was guided by transplant research from Professor Rogers and her team at WIMR. Their work focuses on reducing rejection, extending transplant longevity, and minimising complications — key to Ray's recovery.

A major influence on his care was research into transplant monitoring and immunosuppression. Up to 20% of kidney transplant patients face rejection, requiring a delicate balance of immunosuppressive therapy—too little risks rejection, too much increases infection, cancer, and heart disease.

Professor Rogers' team studies molecular markers to predict rejection and refine immunosuppression, ensuring safer, more effective treatment for patients like Ray.

A Game-Changing Advancement: Early Rejection Detection

Ray is eager for an upcoming clinical trial by Professor Rogers' team that could revolutionise transplant care. Currently, rejection is diagnosed through invasive kidney biopsies with risks like bleeding and infection.

The team is developing a blood test for same-day rejection detection, offering safer, faster, and more precise monitoring. After seeing this research on Channel 7, Ray asked how he could participate. With funding, the trial could begin by 2025, benefiting thousands of transplant patients.

A Future Transformed by Research

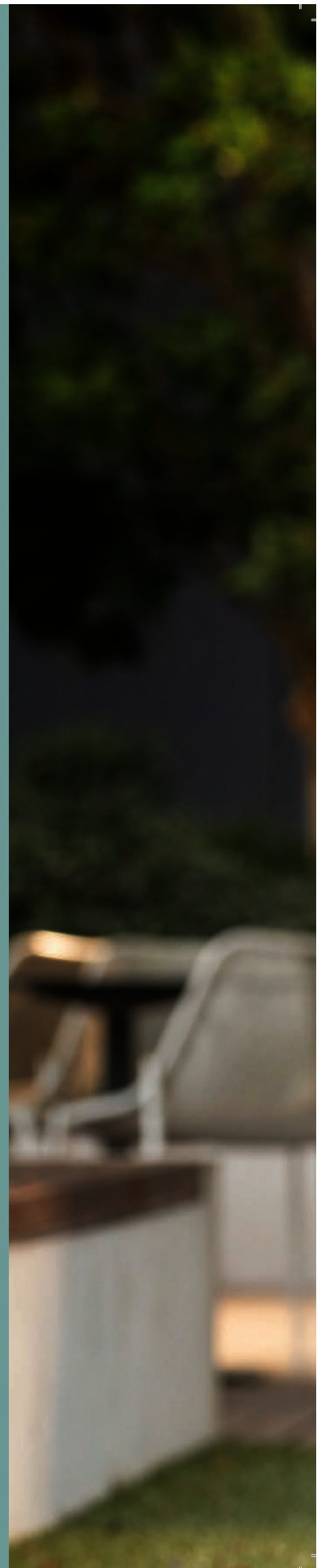
For Ray, research isn't just an abstract concept — it's what gave him a second chance at life.

"Before all this, I thought research was just academic," he says. "But now, I realise how much it improves lives. Without research, transplants and procedures like mine wouldn't exist."

For Professor Rogers, the impact goes beyond Ray's case. The research being conducted at WIMR is shaping the future of transplant care, not only for kidney patients but also for heart and lung transplant recipients, where biopsy-based monitoring is even more challenging.

"Fifty years from now, the challenges I faced will likely be much easier for others," Ray says. "Without research, progress in medicine would stall, and patients like me wouldn't have the opportunities we do now."

Ray's successful transplant is proof of what's possible when world-class care meets groundbreaking research. His journey highlights the critical role of research in transforming transplant care—not just for one patient, but for thousands more in the years to come.



"Honestly, before all this, I thought research was more academic. But experiencing this firsthand, I've realized how important it is. It's improved my quality of life significantly. Without the research, transplants and procedures like mine wouldn't exist."

Research is critical. It's what enables groundbreaking advancements. Fifty years from now, the challenges I faced will likely be much easier for others."





Research centres and groups

Centre for Infectious Diseases and Microbiology

- **Fungal Pathogenesis and Drug Discovery Group** – Julianne Djordjevic
- **Phage Therapy Group** – Jon Iredell
- **Plasmids Group** – Jon Iredell, Muhammad Kamruzzaman

Centre for Virus Research

- **HIV Reservoir Group** – Sarah Palmer, Gabriel Duette
- **HIV and Mucosal Immunity Group** – Andrew Harman
- **Vaccines and Adjuvants Group** – Kerrie Sandgren, Tony Cunningham AO
- **Herpes Neuropathogenesis Group** – Monica Miranda Saksena
- **Herpes Immunology Group** – Tony Cunningham AO, Kirstie Bertram

The Storr Liver Centre

- **Ageing Liver and Metabolic Fatty Liver Diseases** – Jacob George, Saeed Esmaili
- **Viral Hepatitis Pathogenesis Group** – Mark Douglas, Thomas Tu
- **Liver Immunology Group** – Golo Ahlenstiel
- **Tumor Biology and Liver Cancer Stem Cell Research Group** – Liang Qiao
- **Functional Genomics Group** – Mohammed Eslam

Centre for Vision Research

- **Glaucoma and Cell Biology Group** – Andrew White
- **TORIC: Translational Ocular Research and Immunology Consortium** – Chameen Samarawickrama
- **Retinal Research Group** – Gerald Liew
- **Corneal Infection and Immunology Group** – Nicole Carnt
- **Retinal and Eye Epidemiology Research Group** – Gerald Liew, Paul Mitchell

Centre for Transplant and Renal Research

- **Transplant Genomics Group** – Philip O'Connell, Jen Li
- **Kidney Injury Group** – Natasha Rogers
- **Transplant Immunology Group** – Philip O'Connell, Min Hu
- **Translational Transplantation Therapies Research Group** – Wayne Hawthorne
- **Renal Inflammation and Immunology Group** – David Harris, Qi Cao
- **Polycystic Kidney Disease Group** – Gopi Rangan
- **Kidney Injury Repair and Fibrosis Study Group** – Guoping Zheng

Centre for Immunology and Allergy Research

- **Autoimmunity and Amyloidosis Group** – Joanne Reed
- **Neuroinflammation Research Group** – David Brown, Caitlin Finney
- **Autoinflammatory Diseases Group** – Andrew Harman, Scott Byrne
- **Immunogenetics Group** – Grant Parnell
- **Precision Genomics in Intensive Care Medicine Research Group** – Maryam Shojaei
- **Translational Dementia Research Group** – Caitlin Finney
- **Collaborative Immunogenetics and AI Group** – Fabio Luciani

Brain Dynamics Centre

- **Healthy Neurodevelopment Group** – Mayuresh Korgaonkar
- **Mood Disorders Research Group** – Anthony Harris AM, Mayuresh Korgaonkar
- **Trauma Stress Group** – Richard Bryant
- **Schizophrenia Group** – Anthony Harris AM

Centre for Cancer Research

- **Gynaecological Oncology Research Group** – Anna DeFazio AM
- **Blood Transplant & Cell Therapies Group** – David Gottlieb, Emily Blyth, Ken Micklethwaite
- **Translational Radiation Biology and Oncology Group** – Eric Hau
- **Translational Breast Cancer Genomics Research Group** – Dinny Graham
- **Melanoma and Skin Cancer Research Group** – Pablo Fernández-Peñas

Centre for Diabetes, Obesity and Endocrinology Research

- **Diabetes and Transcription Factors Group** – Jenny Gunton
- **Bioengineering & Molecular Medicine Group** – Aaron Schindeler
- **Beta Cell Stress Group** – Ross Laybutt
- **Vitamin D and Liver Group** – Jenny Gunton

Centre for Heart Research

- **Cardiac Regeneration Group** – James Chong
- **Cardiac Gene Therapy Group** – Eddy Kizana

The Ludwig Engel Centre for Respiratory Research

- **Sleep and Cancer Research Group** – Kristina Kairaitis
- **Gas Exchange Consequences of Respiratory Disease Research Group** – Kristina Kairaitis
- **Airways Disease Biology Research Group** – Stephen Milne
- **Upper Airway Physiology Research Group** – Kristina Kairaitis

Funding & awards

WIMR researchers secured highly competitive grants from NSW, Commonwealth, and international funding bodies and foundations.

The list includes a selection of grants of which we were notified during the financial year, with funds available for use in the same or subsequent years.

Grants and awards

These grants recognise researchers listed as 'Chief Investigator,' often leading large teams that include WIMR-based colleagues and extensive networks of domestic and international collaborators.

The grants awarded represent years of experiments developed, hypotheses tested, peer-reviewed publications, and studies conducted. They play a critical role in advancing research programs along the development pathway, ultimately supporting clinical impact on a global scale.

This impact may be realised through clinical trials, research commercialisation, or other translational outcomes.

NHMRC Ideas Grants

Six WIMR researchers were awarded highly competitive NHMRC Ideas Grants in 2024, supporting innovative research across cardiovascular disease, transplantation, infectious diseases and liver disease.

Recipients include:

- Associate Professor Eddy Kizana – Creation of next-generation vectors for cardiac gene therapy – **\$1.60 million**
- Professor Wayne Hawthorne – Xenotransplantation using transgenic porcine islets for diabetes – **\$3.91 million**
- Associate Professor Thomas Tu – Overcoming viral persistence to cure hepatitis B – **\$1.29 million**
- Dr Sohel Julovi – Investigating novel pathways driving cardiorenal syndrome – **\$1.05 million**

In addition, WIMR researchers contributed to successful collaborative NHMRC Ideas Grants, including Associate Professor Emily Blyth (acute myeloid leukaemia) and Dr Alicia Fajardo Lubian (antimicrobial resistance and bacteriophage research).

MRFF Grants

- Professor James Chong – Enhancing pluripotent stem cell-derived heart muscle grafts for clinical trials – **\$977,182**
- Dr Caitlin Finney – Accelerating precision medicine for Alzheimer's disease using 3D brain models and machine learning – **\$691,909**
- Professor Jonathan Iredell – Precision antimicrobial resistance genomics to guide infection control and therapeutics – **\$2.95 million**

NSW Government & OHMR Grants

- Professor Natasha Rogers – Cardiovascular disease mechanisms linking diabetes and chronic kidney disease – **\$749,295**

Multiple Sclerosis Research Australia

- Dr Grant Parnell – EBV and multiple sclerosis progression – **\$24,941**

ACH4 (Australian Centre for HIV and Hepatitis Virology Research)

- Professor Anthony Cunningham – Targeting latent HIV using combination immunotherapy – **\$50,000**
- Professor Mark Douglas – Measuring HBV evolutionary speed as a prognostic biomarker – **\$50,000**
- Associate Professor Thomas Tu – Curative therapies targeting HBV cccDNA – **\$50,000**

National Institutes of Health (NIH) Research Award

- Professor Sarah Palmer – HIV viro-immunology and treatment interruption studies – **\$284,732**

Commonwealth (Department of Health and Aged Care)

- Professor Paul Mitchell – Australian Eye and Ear Health Survey – **\$1.0 million**

ANZSA Sarcoma Australia

- Dr Rosemary Habib – Antigen profiling of sarcoma for CAR T-cell therapies – **\$30,000**

Cancer Institute NSW

- Dr Christina Mapagu – New treatment targets for ovarian cancer – **\$13,896**

Australian Turf Club

- Dr Carla Haroutounian – Philanthropic research support – **\$13,430**

Western Sydney Local Health District

- Dr Wade Bocking – EBV-targeting therapy for lupus – **\$5,000**
- Professor Liang Qiao – Liver cancer research – **\$50,000**

University of Sydney

- Professor Philip O'Connell – Strategic Research Fund – **\$12,500**
- Professor Wayne Hawthorne – Kidney transplant innovation (SPRINT program, with WSLHD) – **\$115,000**

Awards and Fellowships

- Dr Tejas Deshmukh – PhD Rising Star Award – **\$1,000** (Heart Foundation)
- Dr Wade Bocking – Miltenyi Biotec Award – **\$1,000**
- Dr Adrian Lee – Miltenyi Biotec Award – **\$1,000**



Professor James Chong awarded 2024 Jian Zhou Medal for pioneering cardiac regeneration

WIMR congratulates Professor James Chong on being awarded the 2024 Jian Zhou Medal by the Australian Academy of Health and Medical Sciences, a prestigious honour recognising emerging leaders in translational health and medical research. Professor Chong received the award for his pioneering work in cardiac regeneration, particularly his research demonstrating the therapeutic potential of pluripotent-stem-cell-derived cardiomyocytes as a treatment for heart failure. His work has helped advance the field of regenerative medicine by moving innovative laboratory discoveries closer to clinical application, with the ultimate goal of developing new therapies to repair and restore the damaged human heart.

Financials

Board of Directors



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B Com (Hons), MBA, GAICD



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BCom VPM

Footnotes:

- Mr Philip Chronican stepped down as Independent Director and Chair, effective 31 December 2024.
- Mr Michael Rose was appointed as Board Chair, effective 1 January 2025.
- Professor Robyn Ward stepped down as Director nominated by the University of Sydney, effective 12 February 2025. Professor Nancy Baxter served as the University's nominee while acting as Interim Dean of Medicine.
- Ms Maryanne Graham concluded her term as Independent Director and Chair of the WIMR Foundation entities, effective 19 June 2025.
- Mr Philip Rowland was appointed as an Independent Director, and as Chair of the WIMR Foundation entities, effective 20 June 2025.

Financials

For the year ended 30 June	2025	2024	2023
Income			
Grant Revenue	31,858,452	27,159,581	26,152,123
Donations	4,799,302	5,061,365	2,428,661
Investment & Other Income	5,454,742	4,562,465	4,120,426
Total Income	42,112,496	36,783,411	32,701,210
Expenses			
Research expenses	-26,247,647	-24,706,842	-22,720,906
Administration expenses	-8,364,109	-7,684,392	-6,979,745
Fundraising expenses	-753,536	-910,341	-636,507
Other expenses	-3,663,677	-3,408,977	-3,290,900
Total Expenditure	-39,028,969	-36,710,552	-33,628,058
Net Surplus/(Loss) for the year	3,083,527	-72,859	-926,848



Supporters and Acknowledgements

Thanks to the generosity of our philanthropic supporters be they through regular giving, major gifts, bequests, fundraising activities or corporate giving, we have been able to:

- Continue to fund the next generation of research leaders, providing vital support to emerging scientists who are driving new discoveries.
- Invest in state-of-the-art equipment, ensuring our researchers have the best tools to accelerate breakthroughs in disease detection, treatment, and prevention.
- Support high-impact, early-stage research, giving scientists the opportunity to explore bold and innovative ideas that may not yet qualify for traditional funding.
- Go beyond traditional funding limitations, allowing us to respond quickly to new challenges, explore novel ideas, and make discoveries that would otherwise remain out of reach.
- Bridge the gap where government funding alone cannot cover the full cost of pursuing these our vital research mission.

This support fuels groundbreaking work that improves lives, delivers medical breakthroughs faster, and ensures our researchers remain at the forefront of global medical science.

Thank you to our research funders

On behalf of our entire team at WIMR, thank you to all state, national, and international funding agencies for making our impact possible.

Thank you to our partners, including

