



## Vale Professor Helen Thomas (1967-2024)

It is with great sadness that we announce the death of Professor Helen Thomas, an outstanding medical researcher whose work in type 1 diabetes made a significant impact.

Helen was born in Darwin and grew up in Perth. She first started working together with Tom Kay more than 30 years ago, when she was 25, joining his lab at WEHI as its first employee. She had moved to Melbourne to live with her sister Anna, then a designer at Country Road.

Helen quickly showed that she, like Anna, had remarkable technical skills, and decided to enrol in a PhD. She was a highly qualified PhD student, with a first author Nature paper already in her pocket from her time working at EMBL in Heidelberg.

In her PhD, Helen showed that interferon gamma was the main stimulus for the expression of MHC class I molecules on beta cells. She developed highly refined methods for making transgenic mice, and isolating and dispersing mouse islets for flow cytometry and apoptosis assays.

Helen has had a profound impact at SVI, since her arrival in 2002. She was an exemplary research leader, providing empathetic support and supervision to many and building a high functioning research group and a network of friends and collaborators at SVI, throughout Australia and all around the world. Helen was loved, respected, trusted and admired by her many collaborators and colleagues for whom nothing was too much trouble in providing reagents, mouse strains and advice.

Helen was made Associate Director of SVI in 2016. In 2019 she was appointed as an honorary Professorial Fellow at the University of Melbourne. She was instrumental in many of the Institute's key type 1 diabetes discoveries, including the recent successful BANDIT clinical trial and the JDRF-funded Australasian Type 1 Diabetes Immunotherapy Collaborative (ATIC). She was also founder of Efficabiolabs, SVI's platform offering bespoke pre-clinical testing of new type 1 diabetes therapies.

Helen's laser-like focus on getting things done was the cornerstone of the diabetes group's successful work over two decades at SVI. She focused on nurturing those around her, thinking always of others first and then stepping back and joyfully celebrating their achievements. She was humble and self-effacing to a fault. Countless collaborators have been in touch with variations of descriptions of Helen as "a great scientist and a wonderful person".

In addition to all of this, Helen nurtured her close-knit family, was a beach lover, a creative spirit – a potter and a knitter – an Ottolenghi enthusiast, a sourdough devotee and a woman of eclectic and exemplary music tastes.

All of our love and support goes out to Helen's husband, Vince, her beloved children Jack and Gaby, her parents Rosemary and Thomas, sisters Ranjeny and Cathy and to her extended family and many friends.





## Tom says

We were devastated to lose our friend and colleague Helen Thomas earlier this month. I have had so many messages of condolences from colleagues around the world all with the underlying theme of Helen as a great scientist and a wonderful person.

Helen and I worked together for more than 30 years. She was humble, wise and helpful, responding right up to the last time I saw her with surprising and on point insights. Research is a tough and competitive game in which funding is a constant strain and obligations including reading, writing and reviewing papers and grants can be massively time-consuming, eating into weekends and holidays. Helen was able to handle all of this with grace and efficiency. Her ability to get a lot done but still have a full life outside work makes her a special role model to all – including me.

Helen and I had a collaborative approach to our work. This has been good for our team and, I think, for type 1 diabetes research in Australia. The culmination of this was the BANDIT trial – a success story 30 years in the making that could not have happened without Helen.

Helen achieved a huge amount in her time and would have achieved even more if she had not had the terrible misfortune to develop one of those illnesses for which medical research has not yet developed effective treatments.

She will be sorely missed.

Tom



## Revolutionising genetics: inside the Genome Stability Lab

Together with Maddie Riewoldt's Vision (MRV), we recently welcomed Deputy Premier Ben Carroll, Minister for Medical Research, and Sheena Watt MP for a tour of our Genome Stability Lab, led by Associate Professor Andrew Deans.

Once thought to be in the realm of science fiction, gene editing is now at the forefront of medical innovation. Andrew's team is developing advanced gene editing technologies, aimed at preventing children and young adults from dying of inherited bone marrow failure syndromes.

The lab focuses on developing methods to remove disease-causing mutations in bone marrow stem cells, ensuring a lifelong supply of healthy blood cells. This groundbreaking research, supported by MRV, aims to enhance stem cell transplant success rates by eliminating the need for unrelated donors and reducing the toxic conditioning required for effective transplants.

Dr Lorna McLeman, a PhD candidate in the Genome Stability Lab, recently received a PhD Top-Up Scholarship from The Kids' Cancer Project for her research into Fanconi Anaemia. "I'm grateful for this support because our work aims to improve outcomes for paediatric oncology patients in Australia," she said.

**"Gene editing can correct harmful genetic mutations, and we want to expand its application to bone marrow failure disorders. While there are many global clinical trials in this field, most are currently unavailable to Australian children. We want to change that."**

Together, these efforts represent a significant step forward in making cutting-edge genetic therapies accessible to those who need them most.

Image: Deputy Premier Ben Carroll with Sophie Monks O'Byrne and Associate Professor Andrew Deans

### Understanding Bone Marrow Failure Syndromes

Associate Professor Andrew Deans is a leading expert in the field of Fanconi Anaemia, a rare genetic disorder that significantly impacts the bone marrow's ability to produce blood cells. This condition arises from mutations in genes responsible for DNA repair, leading to bone marrow failure, an elevated risk of cancer, and various other health complications.

Children and adults with inherited bone marrow failure face additional health challenges beyond blood production issues. These can include heart and skeletal malformations, as well as problems affecting the kidneys, eyes, and ears. The increased vulnerability to both solid organ and blood cancers further complicates their health landscape.

Through his research, Andrew aims to deepen our understanding of these complex conditions, paving the way for potential therapies and interventions that could significantly improve the lives of those affected.



## The mRNA gold rush transforming lives

Minister for Economic Growth Tim Pallas visited SVI in September to announce the latest grant recipients of the mRNA Victoria Research Acceleration Fund.

More than 15 Victorian research teams will share in \$2.1 million to accelerate new mRNA-based treatments for HIV, inflammatory disease, and hard to treat cancers.

At SVI, Dr Sandra Galic and her team have received \$100,000 to harness mRNA editing technology in order to develop new treatments for non-alcoholic fatty liver disease. This condition impacts over 5 million Australians and is a leading risk factor for cardiovascular disease and type 2 diabetes.

**"We're backing our world-class local researchers to discover the next generation of life-saving vaccines and medicines, and cementing Victoria as the leading hub for mRNA research in the Asia Pacific,"** said Minister Pallas.

Image: SVI Board member Michael Burn, Professor Natalie Sims, Associate Professor Mark Chong, Minister Pallas, mRNA Victoria CEO Pheobe Dunn, Dr Sandra Galic, Professor Tom Kay, Associate Professor Jon Oakhill







## Enhancing breast screening accuracy with artificial intelligence

Every day, 58 Australians are diagnosed with breast cancer, amounting to approximately 21,194 cases this year. Breast Screen Australia reports that around 1 million women are screened annually, with each mammogram independently reviewed by two radiologists, and a third when needed.

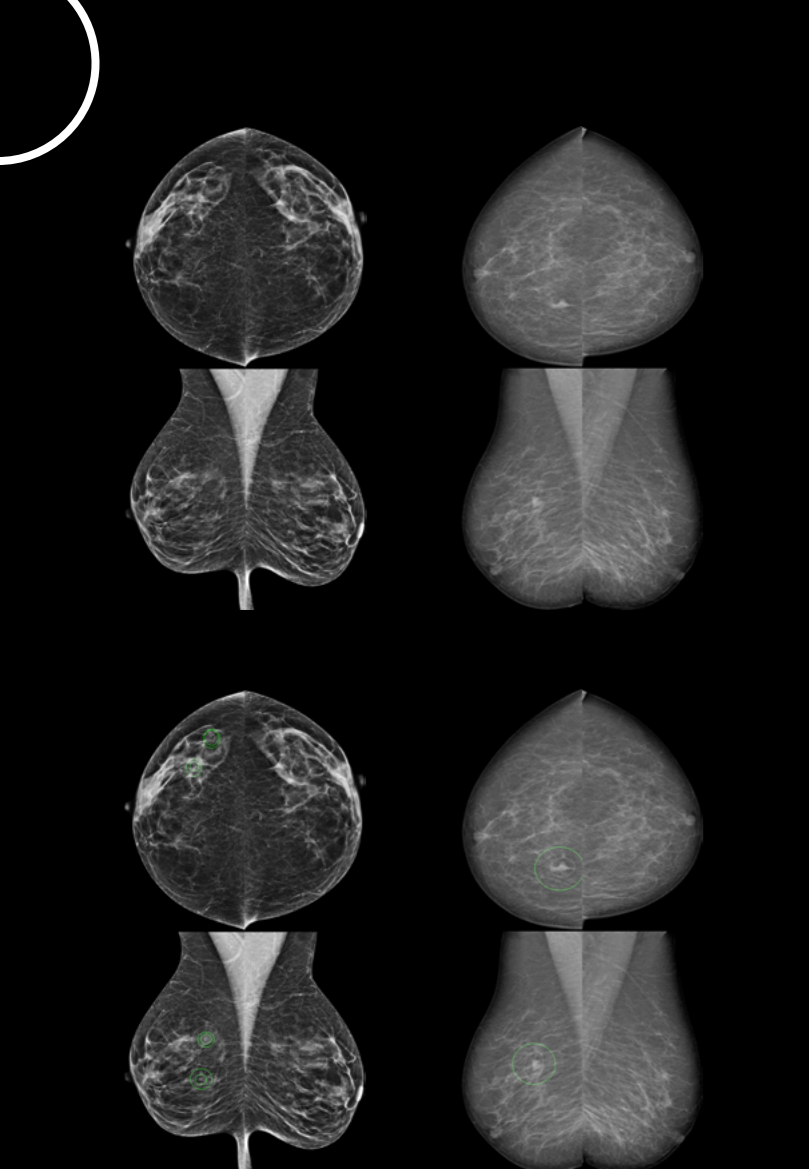
A new study from a collaborative team, including SVI's Associate Professor Davis McCarthy, reveals that integrating artificial intelligence (AI) with human expertise can significantly improve breast screening outcomes. Published recently in *Nature Communications*, together with colleague Associate Professor Helen Frazer, Clinical Director at St Vincent's BreastScreen, and groups from St Vincent's Hospital Melbourne, the University of Melbourne and the University of Adelaide, the study found that AI can reduce unnecessary recalls for assessment by up to 10.9 per cent, enhancing the accuracy of screenings.

***"Our ability to develop a state-of-the-art AI reader here in Australia not only highlights the skills and capabilities of our local researchers and institutions but also shows the value of investing in Australia's capacity for leading AI applications in healthcare,"*** said Davis.

As a follow up to this work, the team are now embarking on an Australian-first trial, with an estimated 200,000 Australian women expected to take part. Funded by a grant from the Medical Research Future Fund, this work represents a critical step toward the safe and effective use of AI in breast cancer screening. The initiative not only aims to improve detection rates but also to alleviate the emotional and logistical burdens associated with unnecessary follow-ups.

As we embrace this innovative technology, we move closer to a future where AI and human insight work hand in hand to enhance the accuracy and efficiency of breast cancer screening, ultimately saving lives and improving health outcomes for women across Australia.

- Since 1994, the death rate from breast cancer in Australia has reduced by over 40%
- 1 in 7 women and 1 in 550 men are diagnosed with breast cancer in their lifetime
- Every year breast cancer kills over 3,300 Australians
- Approximately one woman under the age of 40 with breast cancer dies every week



## Celebrating 45 years – the hunch that led to a wonder drug used worldwide

Forty-five years ago, Professor Jack Martin embarked on a research journey that ultimately led to a revolutionary discovery in bone biology. His work resulted in the identification of a novel protein and the development of a drug therapy now used worldwide to treat osteoporosis, cancer and other diseases, as detailed in a book by his former colleague Professor David Findlay.

Since the 1970s, our understanding of bone biology has advanced significantly, particularly regarding calcium regulating hormones. Driven by what he humorously referred to as an "idiotic rationale," Jack sought to create a laboratory model of a bone tumour responsive to the newly discovered hormone, calcitonin.

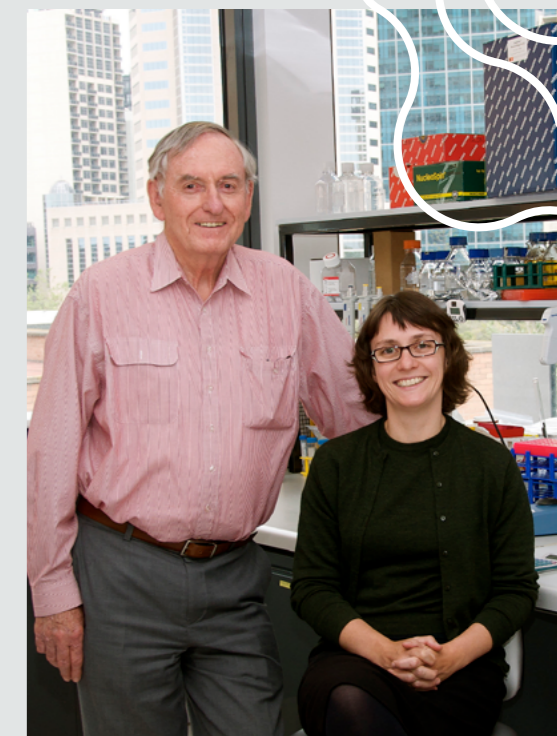
Through his initial studies, Jack discovered that bone-forming cells, called osteoblasts, reacted unexpectedly to parathyroid hormones (PTH).

This revelation led him to propose that PTH and prostaglandins acted on osteoblasts, which then produced a substance that stimulated other cells, called osteoclasts, to resorb bone.

Jack's presentation of these findings at a London meeting in 1979 ignited a cascade of research that would last two decades, culminating in the discovery of RANK Ligand (RANKL), a crucial protein for osteoclast formation.

As SVI Deputy Director Professor Natalie Sims notes, Jack's innovative approach exemplifies the Institute's motto: 'Inspired by discovery, driven by purpose.'

***"Jack's work has not only expanded scientific understanding but also opened new avenues for effective treatments, demonstrating the profound impact of curiosity-driven research,"*** Natalie says.



## Research with heart

SVI's newest recruit, Dr Liz Paratz, has recently garnered an impressive collection of awards, reflecting her exceptional contributions to cardiac research. In just 2 weeks, she received the TJ (Jack) Martin Medal from St Vincent's Hospital Melbourne, the Ralph Reader Prize at the Cardiac Society of Australia and New Zealand (CSANZ), the Chancellor's Prize for Excellence in the PhD thesis and the Dean's Award for Excellence in the PhD Thesis from the Faculty of Medicine, Dentistry and Health Sciences at the University of Melbourne.

As a new Team Leader in SVI's Heart, Exercise and Research Trials (HEART) Lab, Liz expressed her gratitude, noting that these accolades help shine a light on vital research. "Sudden cardiac arrest affects 26,000 Australians each year, with about 90 percent of people dying - many unaware they were at risk," she said.

***"Current health interventions are directed at those diagnosed with disease, but there is an important window of opportunity in preventing disease among those at heightened risk. Risk identification for these conditions is currently poor,"*** said Liz.

Liz's work focuses on improving risk identification for sudden cardiac arrest, aiming to prevent disease in those at heightened risk. Her research is supported by SVI's collaboration with the Victor Chang Cardiac Research Institute.

Professor André La Gerche, who recently established the HEART Lab at SVI, praised Liz's professionalism and remarkable capabilities. "Her abilities as a clinician and researcher are advanced well beyond her years."

Much of Liz's research centers on the EndUCD Registry, aimed at understanding cardiac arrests in those under 50. This initiative was inspired by the personal loss of Professor Lorraine Dennerstein's son, Ross, who died at the age of 40, in her quest to seek new ways to prevent similar tragedies.

"Liz took up the challenge and has exceeded all expectations," Lorraine said.







## Empowering breakthroughs: Catalyst Circle drives transformative health research

The SVI Foundation's Catalyst Circle event at the Garden Restaurant, NGV, earlier this year brought together a passionate group of donors dedicated to advancing vital research at SVI. This initiative channels impact-driven donations towards essential equipment for researchers tackling diseases affecting millions of Australians, including cancer, heart disease, type 1 diabetes, obesity, osteoporosis, Alzheimer's, and infectious diseases.

The event highlighted the profound impact of targeted funding, enabling SVI to invest in cutting-edge technologies where they are needed most. Generous contributions have allowed the acquisition of state-of-the-art tools that are crucial for advancing our research into diseases like type 2 diabetes, dementia, and cancer.

The event helped raise funds for a new instrument that plays a key role in SVI's type 1 diabetes research. It will help to identify and separate components of insulin-producing beta cells that the body's immune cells target, paving the way for a blood test to monitor immune cell responses and ultimately create a preventive vaccine for type 1 diabetes.

With the support of our Catalyst Circle, we are not just grateful; we are empowered. These contributions are instrumental in driving breakthroughs in these critical areas of health research.



## A heartfelt thanks to our Lions Supporters

SVI was thrilled to recently host representatives from the Lions Australia Diabetes Foundation and Lions Club. We are immensely grateful for their generous contributions toward acquiring the IncuCyte Live Cell Imaging Platform, a cutting-edge tool that will significantly enhance our diabetes research efforts.

In addition to this invaluable support, Lions Victoria District 201 V1-4 and Lions International Foundation US, contributed a substantial contribution, totalling \$195,000. This brings the overall commitment to \$220,000, towards the instrument's purchase.

The IncuCyte Live Cell Imaging Platform allows researchers to monitor living cells in real-time, providing unprecedented insights into cellular behaviours and interactions. For diabetes research,

this technology is transformative. It enables us to observe the effects of various treatments on insulin-producing beta cells, which are crucial for developing new therapies. By continuously tracking cell health, growth, and responses to interventions, the IncuCyte offers detailed data that can lead to more effective and personalised treatment strategies.

With the support of the Lions community, our researchers are now equipped with the tools needed to make groundbreaking advances in diabetes research. This investment not only accelerates our understanding of the disease but also brings us closer to innovative solutions. We extend our sincere thanks to the Lions Australia Diabetes Foundation, Lions Victoria District 201 V1-4, and Lions International Foundation US for their exceptional generosity and commitment to this vital cause.

Image: Lions Club representatives with SVI researchers and staff

## Annual scholarship dinner serves an ace

More than 150 friends of SVI attended the 2024 SVI Scholarship dinner at Kooyong Tennis Club in October.

"Your support helps us to raise funds to provide a Top-up Scholarship of \$5,500 per year over 3.5 years for our PhD students. At a time when many of their peers are entering the workforce, our PhD students engage in further study.

"They do this supported by a relatively meagre wage, which has been put under even more pressure with the increases in the costs of living we have seen over the past few years," said Tom Kay.

Over the years, the Support Group's fundraising efforts have supported more than 120 scholars researching some of Australia's most challenging diseases, including multiple myeloma, pulmonary fibrosis, and Fanconi anaemia.

The evening's student speaker was PhD student Kezia Gitareja, who is supervised by Associate Professor Elaine Sanij in our DNA Damage and Cancer Lab.

The 2024 recipients of the Top-Up scholarship are: Saghar Mehrban, Geoff Zhang, Elissah Granger, Elahe Hajimiri, Xiaozhuo Yuan, Liyunhe Qian, Vita Sukonthamarn, and Li Li.

SVI extends its gratitude to the Support Group Committee Members: Claire O'Callaghan OAM, Angela Griss, Bernadette Dennis OAM, Colleen Bolton, Genny Nunan, Jo Lonergan, Margaret Batrouney, Margaret Reeves, Pam Batrouney, Paula Gurry, and Robyn Brasher.



## More than spare change: community fundraiser raises over \$10,000 for SVI

Twelve-year-old Zoe Whitbourne and her father, Craig, recently walked over 80 kilometres, raising more than \$10,500 for groundbreaking type 1 diabetes research at SVI.

Craig was diagnosed with type 1 diabetes 25 years ago at the age of 15, so he was heartbroken when Zoe received her diagnosis in 2022 at just 9 years old.

**"Type 1 diabetes can be unpredictable and time-consuming. Despite my experience with this disease, watching Zoe navigate the grief and anger of her diagnosis is incredibly difficult,"** Craig shared.

Type 1 diabetes is a life-altering condition, with about 3,000 people diagnosed in Australia each year. It is an autoimmune disease in which the body's immune system attacks its insulin-producing cells. As a result, the 134,000 Australians living with type 1 diabetes cannot produce insulin, the hormone that regulates blood sugar levels. They require daily insulin injections or the use of an insulin pump, along with constant blood glucose monitoring.

Zoe and Craig's fundraising effort is a powerful reminder of the strength of community support in advancing research that can improve the lives of those affected by this condition. Thank you to everyone who contributed to this inspiring initiative!



# Celebrating the legacy of Hilton Nicholas: a lifelong commitment to medical research

We are proud to honour the remarkable life and contributions of Hilton Nicholas AM OBE, whose legacy continues to resonate through SVI. Born in 1925 to George and Ruby Nicholas, Hilton's journey was marked by leadership, service, and an unwavering passion for advancing medical science.

Hilton's distinguished career began in the skies during World War II, where he flew Hurricanes for the Royal Australian Air Force. After the war, he joined the family business, Nicholas Pty Ltd, contributing to its international operations. His leadership extended beyond the corporate world; he also chaired the Victoria Racing Club and made a significant impact as a thoroughbred breeder.

Hilton's commitment to SVI was not just professional; it was deeply personal. Having lost his mother at just 18 months old, he understood the importance of medical advancement in changing lives. His childhood experiences shaped his belief in the moral responsibility to contribute to society. "Medical research and development resonated powerfully with him as a way of helping people," Marjorie reflects.

His passion for philanthropy was matched by Marjorie's. Theirs was a mutual commitment to giving back, guided by their strong values. "We shared the firm conviction that we were duty bound to support causes that resonated with us wherever we could," she adds.

Hilton's foresight in leaving a generous bequest to SVI ensures that his legacy of advancing medical science will continue for generations to come. His unshakeable belief in the importance of funding medical projects, regardless of their success rate, underscores a profound humanitarian spirit that inspired many.

As we reflect on Hilton Nicholas's extraordinary life, we celebrate not only his achievements but also the enduring impact he has made in the field of medical research. His story is a testament to the power of dedication, compassion, and the importance of giving back to the community. Hilton's legacy will undoubtedly inspire future generations in the pursuit of knowledge and healing.

***"He would be incredibly proud to see that his foresight in leaving a bequest is helping to ensure that SVI's groundbreaking research continues. It's a powerful way to realise his legacy of advancing medical science,"*** said Marjorie Nicholas.

For more information on SVI and how you can contribute to medical research, please contact Kathleen Lambrick, Head of Fundraising, [kathleen.lambrick@svi.edu.au](mailto:kathleen.lambrick@svi.edu.au) or 0425 462 934.





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