

# PERKINS NEWS

25TH BIRTHDAY WONDER EDITION APRIL 2023



25

YEARS

DRIVING DISCOVERY



HARRY PERKINS INSTITUTE  
OF MEDICAL RESEARCH

**THANK YOU FOR YOUR SUPPORT  
CELEBRATING 25 YEARS OF THE PERKINS**



# Director's Message

## THIS YEAR IS THE PERKINS 25TH ANNIVERSARY

**Back in 1998, the Perkins was known as the WA Institute of Medical Research (WAIMR). We were housed in a cramped basement of Charlie Gardiner's. To the right is me back in the day with a budding young scientist, my son Nick, who is now 26!**

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Two generations of another family grace our cover, Harry Perkins's daughter Jane and granddaughter Hannah.

It took a great number of visionaries like Harry and the incredible generosity of people like you to get to where we are today.

With your support, Perkins researchers now work out of world-class research facilities co-located at the three main hospitals in Perth – Fiona Stanley, Sir Charles Gardiner and Royal Perth.

The institute is now home to over 250 researchers from across the world – committed to finding new ways to treat the diseases that most affect our families.

Within this magazine, you will meet some of our researchers and learn about their greatest achievements, biggest challenges and hopes for the future. And in the centre of this issue is a tribute to you, our amazing supporters.

For me, my greatest career achievement is the Perkins. I am so honoured to be its Director, so proud of the breakthroughs and discoveries we've made and so grateful for the strong community of passionate fans standing along side us.

My greatest challenge is always funding. There isn't enough to go around and that places an incredible burden on the science.

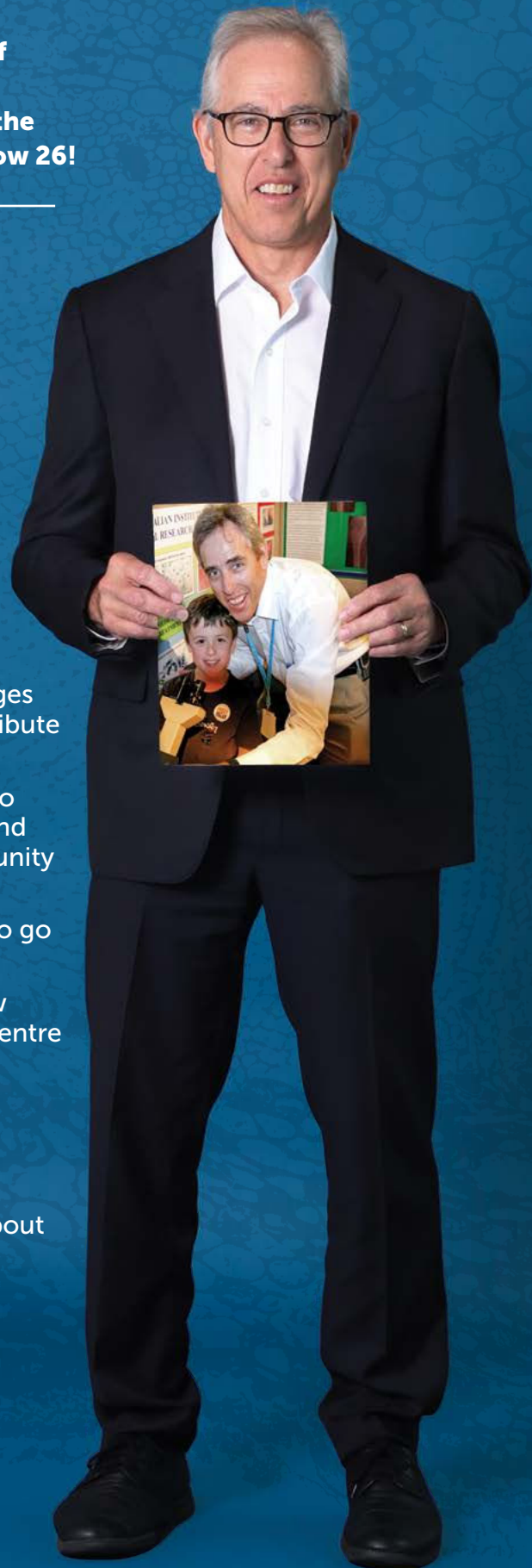
And my hope for the future is to one day look out my window here at the Perkins and see the WA Comprehensive Cancer Centre completed and operational next door – offering all West Australians the best cancer research, clinical trials and treatment in the nation.

Please enjoy this special issue of the Perkins magazine. It's dedicated to the people who make the institute great – our researchers and you. Together we will continue to wonder about what's next and how we can get there.

Thank you for your support and kindness – yesterday, today and tomorrow. We would be lost without you.



**Professor Peter Leedman AO**  
Director, Researcher, Doctor, Donor



# Our Future

**The Perkins is pioneering West Australian-led research to improve global health outcomes to help you live healthier, longer lives.**

We have big plans and audacious goals. And we invite you to be part of the wonder.

## From Science to Solution

- Grow and expand key strengths in cancer, heart and diabetes and rare genetic diseases
- Specialised labs in liver cancer, melanoma, indigenous cancer and women's cancer
- Promote our globally recognised cardiovascular capabilities with focus on CT imaging, biomedical engineering and peripheral arterial disease
- Continue to be a global leader in rare genetic diseases
- Focus on precision medicine to tailor treatment to patient not disease
- Support commercialisation opportunities for new diagnostics and therapeutics

## World-Class Infrastructure

- Secure funding for WA Comprehensive Cancer Centre
- Support our tenants in the Perkins buildings to produce great research
- Acquire leading-edge equipment and platform technologies to be in the best position for future discoveries
- Have the best labs in the country to attract the brightest minds

## Passionate Fans

- Increase and support loyal supporters
- Create a strong community of advocates willing to speak on our behalf
- Provide variety of engagement opportunities for supporters to get closer to the cause
- Recognise the symbiotic relationship forged by researchers and those who support them
- Tell Perkins stories to anyone who will listen
- Help the community to support WA researchers
- Be the stop gap for deserving researchers missing out on funding

## Sustainable Future

- Self-fund infrastructure costs
- Diversify and strengthen revenue streams
- Engage in regular, strategic scientific reviews and action recommendations
- Develop strong commercial partnerships that are mutually beneficial
- Collaborate with like-minded state, national and international Institutes
- Leverage technology to transform how we work

## Proudly Perkins

- Promote employee excellence across all aspects of the Perkins
- Protect early- to mid-career researcher (EMCRs) development by fostering Safe Harbour fellowships
- Design and implement a people-first culture that embraces equity, diversity and inclusion
- Expand scientific collaborative base nationally and internationally
- Provide career path for researchers and professional staff



# The Researchers



**A/Professor  
Juliana Hamzah**

## **PIVOTING WITH PURPOSE**

### **GREATEST ACHIEVEMENT**

I started my career as a cancer researcher but, in developing new treatments to open the knot of vessels that form around a tumour, I discovered a

new targeted drug for cardiovascular disease that has the potential to improve health outcomes for millions of people around the world. By shrinking atherosclerotic plaque, the new drug could reduce the risk of heart attack and stroke and improve blood flow to the heart and other organs. It may also reduce the incidence of peripheral arterial disease (PAD). If left untreated, PAD can be debilitating and lead to amputation. Currently, one in every five Western Australians over the age of 65 is diagnosed with PAD.

### **BIGGEST BARRIER**

There are two main barriers stopping me from progressing this potential game-changing treatment. Firstly, developing a new drug requires extensive testing and approval from regulatory bodies. This process is lengthy and costly. Secondly, getting a new drug to market requires significant financial investment, including funding for research, development, clinical trials, and manufacturing. It's a daunting task for someone who just wants to save more lives.

### **HOPE FOR THE FUTURE**

My vision for the future is that this new treatment I discovered that targets and binds to lipid-enriched atherosclerotic plaque will shrink it. This breakthrough has significant ramifications, as there are currently no drugs that effectively remove plaque and improve blood circulation in patients with blocked arteries. The global socioeconomic impacts are immense, with predicted benefits including reduced hospitalisation, less need for radical intervention like amputation, lower healthcare costs and less burden on health services.



**Dr Olivier Clement**

## **UNLOCKING THE MECHANICS OF MEMORY**

### **GREATEST ACHIEVEMENT**

My research is about memory function. I'm proud of the research articles I've published so far. I think they bring something new to the research community.

For example during my work in France, we mapped the regions of the brain that are specifically active during REM sleep, paving the way for the identification of the function of REM sleep in dreaming and emotional memory processing.

I've been close in receiving national funding over multiple years. Being a 'near miss' (as it is called) was the main criteria in awarding me the inaugural Perkins Safe Harbour Fellow – providing me with three years of funding. I want to thank all those supporters who have contributed to Safe Harbour – it's a visionary initiative and I'm so grateful for their support.

### **BIGGEST BARRIER**

My main challenge is time.

Academic research is highly competitive. Only a very limited percentage of early- to mid-career researchers (EMCRs) successfully establish independent research groups. It's critical to generate research articles during this period to help secure future funding.

I established a new research program here at the Perkins focusing on the mechanisms of memory, which led to a few years without major publications. So, my current track record is not as competitive as some others.

The Perkins Safe Harbour Fellowship gives me the gift of time... time to generate innovative results and boost my track record, which makes me more competitive nationally and internationally.

### **HOPE FOR THE FUTURE**

My goal is to better understand the complex workings of the brain, leading to us identifying the cause of a myriad of neurological disorders affecting millions of people worldwide and to develop new therapeutic interventions to help these patients.



## Professor Kevin Pfleger

### WEARER OF MANY HATS

#### GREATEST ACHIEVEMENT

With amazing colleagues, taking our discovery of a new treatment for kidney disease from the lab through the commercialisation process is something I'm most proud of.

The commercialisation has happened through our spin-off company Dimerix, and our new drug, DMX-200, is currently being assessed for efficacy in people in Phase 3 clinical trials.

This achievement was built upon foundational research developing the bioluminescence resonance energy transfer (BRET) technology to investigate how our bodies function at the cellular level. The knowledge we have and continue to glean from using this technology has the potential to address a range of inflammatory disorders in the future.

#### BIGGEST BARRIER

Funding is always the greatest challenge. It takes a great team of people with many years of experience to do cutting-edge research and development. However, when the grant success rates are so low and there is not enough capital available for early-stage innovation, crossing the 'valley of death' is tough.

#### HOPE FOR THE FUTURE

I hope our clinical trials are successful so the need for kidney dialysis is significantly delayed for people with chronic kidney disease. I also hope success in this trial will enable the development of further treatments for other inflammatory disorders. Finally, I hope that we can use this success, along with the success of our other company RAGE Biotech, and our programs Biodesign Australia and the Australian Clinical Entrepreneur Program, to drive early-stage innovation more broadly.



## Dr Joshua Clayton

### THE ULTIMATE COLLABORATOR

#### GREATEST ACHIEVEMENT

I focus on rare muscle diseases that are often deadly in the early years of life. As the diseases I work with are rare and often fatal, there are very few patient samples to work with. My job involves taking

blood cells from patients and 'reprogramming' them into a type of cell called a 'stem cell' that we can then turn into muscle cells. We use the muscle cells to create models that allow us to learn more about the disease and test new treatments.

I've thought a lot about my proudest moment as a researcher but ultimately, I feel like I've had most impact through teaching, training, supporting and supervising others. The staff and students I've worked with have learned a lot from me. Ultimately, providing a supportive and nurturing environment has meant we all work together well as a team and do better work as a result.

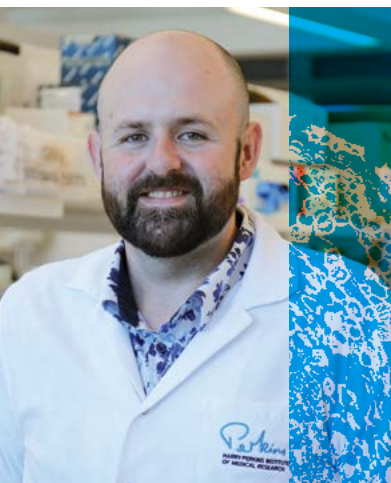
#### BIGGEST BARRIER

People may not know that medical research is mostly funded by short-term grants from the Government, with help from institutes, universities and philanthropy. I've seen first-hand that it's difficult for even the most passionate scientists to stay in this career long term, especially those who have families to think about. Not knowing whether you'll have a salary next year is hard, and it's a constant source of worry and stress.

#### HOPE FOR THE FUTURE

We're developing treatments using models in a lab, and I'd like to improve our collaborations with clinical teams earlier on, so we know that what we're doing is going to be accessible and helpful to patients.





## Dr Kieran Mulroney

### THE ANTIBIOTIC ALLY

#### GREATEST ACHIEVEMENT

A person with a serious systemic infection (such as sepsis or peritonitis) has greater than 7% chance of death every hour that they don't have an effective antibiotic – that's cumulative.

Medical professionals can't afford to wait days for the lab evidence – they need to prescribe the right antibiotic to each patient every time. Without the right antibiotic, patients will die. Doctors rely on broad-spectrum antibiotics to make sure that first antibiotic is effective. The problem is that the overuse of broad-spectrum antibiotics is a key driver in the spread of resistance to antibiotics.

We've developed a test to confirm if the cause of the patient's illness is bacterial infection and then identify which antibiotic will be effective with 96.9% accuracy. All within 3-5 hours. This is days faster than the existing tests.

It's been a long grind and a great team of students, scientists, and doctors collaborated for many years, and pushed the limits of the technology and the science, to make this advancement possible.

#### BIGGEST BARRIER

It's money – we don't have it and we need to spend it. Despite the fact that we've proved this can work, the road ahead is long and extremely expensive. There are many complexities involved in developing and rolling-out new diagnostics, so it's perceived as a risky proposition for potential investors and that's a big challenge.

#### HOPE FOR THE FUTURE

My goal is to use this personalised precision approach to microbiology so that doctors can treat each patient with the right antibiotic on the same day. We've proved that this can be done but for this to be adopted by medical professionals, it needs to be tested to the highest standard. Then it needs to be developed into a test that can be used in a variety of medical settings, everywhere and every day.



## Professor Shirley Jansen

### THE VASCULAR LEADER

#### GREATEST ACHIEVEMENT

I am most proud of the collaborative teams that I have been part of who are dedicated to better outcomes for patients. I truly believe that collaboration is the key to unlocking new treatments for vascular and heart disease and diabetes.

The key to our work at the Perkins is bringing together the clinical patient experiences, the research-based vascular biology and the bioengineering skills. This makes us perfectly placed to apply differing perspectives and integrate them into devices that are more likely to succeed in the collaborative environment with first class facilities at the Perkins.

#### BIGGEST BARRIER

The funding environment is too competitive right now. And, despite a lot of collaborative projects and the amazing novel work at the Perkins, WA has a low success rate in national funding and that's a real handicap.

We do have better collaborations with industry and private supporters at the Perkins, to whom we are so grateful, but need to secure high value investment to help us move forward rapidly, particularly with bringing our new drug to market.

#### HOPE FOR THE FUTURE

Access to a drug to cure atherosclerosis or peripheral artery disease (PAD), which affects over 200 million people globally and is one of the biggest causes of amputation. Juliana Hamzah and her team here at the Perkins have developed such a drug – we're excited to translate that to patient care.

I'd also like to see better care of the diabetic foot because a significant proportion of amputations are preventable. We have a lot of problems with adapting international guidelines for care to Australia, particularly for regional locations and the indigenous population despite working in large multidisciplinary motivated teams.

Finally, working bioengineers who have the capability to print with human cells and rebuild tissues with 3D and 4D printing is an incredible opportunity which we are focused on and lucky to have at the Perkins. I have a blue-sky vision of replacing tissue for partial amputations in the foot, as well as looking at shape-changing devices and degradable devices that could bypass the risks of repeat surgeries for patients with arterial disease.



## Professor Ruth Ganss

### CANCER MICROENVIRONMENT PIONEER

#### GREATEST ACHIEVEMENT

25 years ago, I was working at one of the biggest cancer research centres in Europe. I was one of the first researchers to investigate the cancer microenvironment – not just what is happening with the cancer cells but what is happening around them. Back then, immunotherapy was non-existent. People had no confidence that we would ever get our own immune cells to reach the cancer core and attack it. So, I took on this challenge and I have done so ever since. The Perkins has given me the opportunity to continue my work on this big idea. I discovered a way to open tumours to immune cells. I think persistence and seeing this big idea become a breakthrough is my greatest achievement!

#### BIGGEST BARRIER

A hurdle is always funding. Being funded mostly from Australian public funds is challenging. Unlike other countries, like America, you cannot build up very big teams of researchers. You cannot sustain that. Researchers also leave to go overseas following better opportunities, so another major challenge is retaining brilliant minds here in WA.

#### HOPE FOR THE FUTURE

My hope is that immunotherapy becomes available for all cancer types. We are not there yet. It's exceedingly successful, but only for a few cancers. I have great faith that immunotherapy will take off even further once we understand their microenvironments better. It's a more natural path to sharpen your own immune system to attack cancer rather than going in with a more toxic chemotherapy approach. A targeted therapy that's designed to specifically attack the cancer but leaves the rest of the body alone can only be better for the patient.



## Michael Vernon

### HEART VALVE HERO

#### GREATEST ACHIEVEMENT

I study at T3mPLATE, which is a team of biomedical engineers specialising in 3D printing, headed by Dr Elena Juan Pardo. We're a relatively new laboratory but I'm really proud of the achievements we've made in that last 3 years and even more so, the culture that we've developed. We're all passionate and collaborative, and people want to work with us, making it a really wonderful place to conduct research.

#### BIGGEST BARRIER

Definitely funding. Although we can do a lot with very little money in biomedical engineering, it takes significantly more time. We have so much potential and so many ideas, but without funding we're really spread thin, and we end up moving slowly towards outcomes for patients who need them urgently.

#### HOPE FOR THE FUTURE

Valvular heart disease is the third biggest contributor to cardiovascular disease, which is the biggest killer worldwide of men and women. Patients, both young and old, are often fitted with a prosthetic heart valve that will need replacing every 10-20 years and may require lifelong anti-coagulation therapy.

My project aims to develop, test and optimise tissue-engineered heart valves using a highly advanced 3D printing technique. This tissue-engineered heart valve would be implanted cell-free so the body's own inflammatory response would "grow" cells as the implanted scaffold harmlessly degrades. This would leave the patient with their own living, bespoke valve that would last a lifetime.

I'm incredibly passionate about the field of tissue engineering and the work we are doing at T3mPLATE. It is a very transformative technology and I want to help get the devices we're making into the clinic.





To our incredible supporters. You're at the



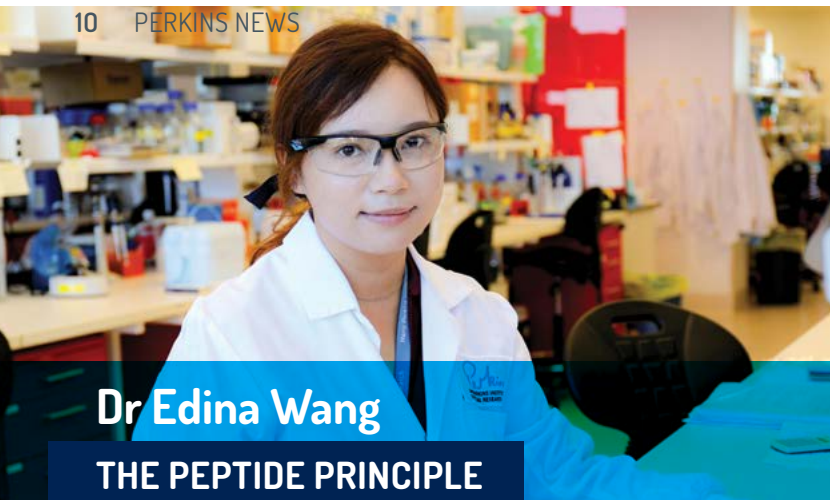




centre of everything we do. Thank you.





**Dr Edina Wang****THE PEPTIDE PRINCIPLE****GREATEST ACHIEVEMENT**

Eight years ago, I joined Prof Pilar Blancafort's lab at the Perkins to start my PhD project creating novel treatments for hard-to-treat breast cancers using peptides, the building blocks of proteins, as a drug delivery system.

Melittin, a peptide found in bee venom, has anti-cancer properties against breast and ovarian cancer. I've been engineering peptides to melittin to see if we can improve the delivery of those cancer-fighting properties into tumours. A recent early-stage toxicity study to test its safety and to determine a potential dose had great results. We discovered the peptide was really potent – with one injection we could see the tumour reduce almost immediately, within six hours.

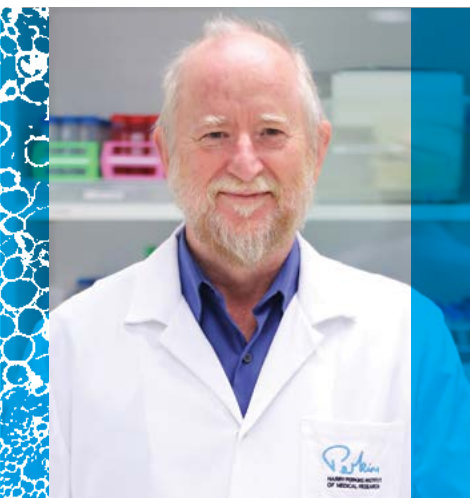
I'm proud of developing strong collaborations with companies and the community on this project. It still has a while to go (7-10 years) before it could be rolled out in hospitals – I don't want to overpromise and there's still a lot of testing to be done.

**BIGGEST BARRIER**

The main barrier is funding. I'd like to focus on one goal at a time so we can get to the outcomes faster but that's not how the grant funding works. If we're really focussed on looking at a cure for ovarian cancer but we don't get funding for that, then we have to find another project that is more likely to be funded that is innovative and exciting.

**HOPE FOR THE FUTURE**

I'm passionate and devoted to finding a cure for women's cancer, no matter what happens in the future. I'd like to see how we can spread what we're learning now about peptides and triple negative breast cancer to other diseases too. Ovarian cancer is one area I'd like to look at – we often don't know someone has ovarian cancer until the late stage and that's a problem I'd like to solve.

**Professor Grant Morahan****IDENTIFYING DISEASE RISK****GREATEST ACHIEVEMENT**

I head the Centre for Diabetes Research. Our research is very broad – because we focus on genetics, we can examine not only diabetes but also

other diseases. My team had developed the world's best resource for rapid discovery of genes controlling complex traits and now we have created the best technology to identify "Genetic Risk Signatures" – combinations of genes that can identify people who are at increased risk of diabetic complications, cancer, stroke, heart attack and many other diseases. These resources have been used to understand how diabetes develops, and many other conditions ranging from the genetic causes of melanoma to bone disease, to dementia and many other diseases. .

**BIGGEST BARRIER**

I am sure most scientists will say funding is a constant concern, but I also think that there is a growing issue of age discrimination. The statistics show scientists over the age of 55 are denied funding and by very small margins (which means they're still competitive). As a result, Australia is losing these experienced people with deep scientific and historical knowledge of medical research due to discrimination that should not happen today.

**HOPE FOR THE FUTURE**

My vision for the future is to use the technology we've developed to identify people who are at risk of diseases so those diseases can be prevented or treated at an early stage. This would lead to a healthier community because we can save deaths from diabetic complications, melanoma, heart attack and other diseases. Knowing the molecular basis of these diseases also allows developments of new treatments.





## Professor George Yeoh

### THE CANARY CALLER

#### GREATEST ACHIEVEMENT

I've been working on the liver for 45 years, 25 years here at the Perkins. Liver cancer is one of the most

complex and deadly cancers, but we have very few tests to see what's going on with the liver.

My mission was to find the "canary in the coal mine" of liver disease – what was the one sign we could find to alert us that something was wrong?

When we first hypothesised there was a stem cell in the liver, people thought I was crazy because everybody knows the liver regrows. I'm proud to say that we were the first people in the world to identify and quantify stem cells in people with fatty liver disease, viral hepatitis and severe alcoholic liver disease.

This finding proved that when the liver is in distress it can call on stem cells. We also found an association between too many stem cells and liver cancer.

We believe we have found the canary – liver stem cells. And when they're present, we know something is going wrong much earlier than we typically would using imaging and liver tests.

#### BIGGEST BARRIER

Funding has always been and continues to be the biggest barrier. When you talk about quantities of liver stem cells, even when they are most abundant in diseased livers there are still very few. At the Perkins we're very fortunate to have access to equipment that can find and analyse these rare cells, but it costs about \$5,000 each time we use it and I need to run many samples to progress this research.

#### HOPE FOR THE FUTURE

Right now, we use a needle biopsy to take a sample of the liver which is a serious surgical procedure. It only represents a tiny bit of the whole liver. We can unknowingly take a healthy portion of liver with no stem cells present. So, we need a test that represents the whole liver.

We've recently found that a bit of these stem cells is shed so the holy grail would be to find this marker in the blood. A simple blood test based on this marker could then be used to check the health of the liver. This is not 25 years away, it's within our grasp in less than 5 years.



Jess Baker

### THE NEXT GENERATION

#### GREATEST ACHIEVEMENT

I'm proud of my science, but at the same time, I'm most proud of staying true to myself... of continuing to be balanced and not making my lab work my entire life. I'm proud of asking questions that challenge the notion of wellbeing and the accepted levels of industry burnout. And I'm proud for keeping up with my extracurricular hobbies. Supporting other students as Chair of the Student Committee has been a huge part of my time at Perkins and I'm proud of what we've accomplished. I'm also proud that I have had two failed projects (with failure comes learning) and I still have enough content to write a thesis!

#### BIGGEST BARRIER

It's pretty much accepted that stress and burnout come with the career. It's something I've fought against but it's so systemic in the industry and it's the main reason I'm considering other options. Also, imposter syndrome is real. As a young researcher surrounded by super intelligent people all the time, it's sometimes hard to think that you're there because you know things. It's a confidence thing. I'm scared to apply for new roles in science because I don't feel like I know enough, but I know that I do, or I wouldn't still be here.

#### HOPE FOR THE FUTURE

My future is something I've been contemplating a lot recently. Given I'm almost through my PhD I've had to start thinking about what's next. I've decided not to stay in academic research but to transition into more industry-based research and science communication. I love being in the lab, but my passion is innovation and improving healthcare from a technical perspective. My even bigger dream is that I might play a part in further breaking down barriers for women and people from disadvantaged communities seeking a career in STEM.



## Emeritus Professor Nigel Laing AO

### THE GENE HUNTER

#### GREATEST ACHIEVEMENT

The most amazing moments are the eureka moments where you go from not knowing, to knowing instantly. I've had a few. One was at home finding the gene for Laing distal myopathy (named after me).

But the thing I'm most proud of is hypothesising that skeletal muscle actin disease existed and then my group finding it. I had been told by basically everyone it wasn't possible.

To give you an idea, typing out the human genome would take 17 years of non-stop typing. So, to find a dominant disease, we're looking for the equivalent of one typo in 17 years of typing. For one of the first genes we found causing paralysis before birth, Gina Ravenscroft started by finding one WA family and one Turkish family with errors in the same gene.

The wonderful thing about genetics is that the translation of research results is almost instant.



When we discover a new disease gene, the PathWest diagnostic lab can use that information to diagnose families right away.

#### BIGGEST BARRIER

Now, it's always the fight for funding. The success rate for an Ideas Grant is now about 10%. When I started in 1981 the success rate was over 40% and people could consider a career in research with confidence. It's much harder today.

#### HOPE FOR THE FUTURE

My vision is that we continue to help families by identifying more of the genes that cause disease. On the other side of the coin, it is using the genes we already know to help couples in carrier screening. Through widely accessible carrier screening, we could warn couples of their chance of having a child with a severe recessive disease.

Being Emeritus Professor means I'm retired and research is now my hobby. Some may think it's tragic that research is my hobby, but there is almost no other feeling like finding something no one's ever known before and then applying that to help people. It's extraordinary.



## A/Professor Gina Ravenscroft

### PROVIDING FAMILIES WITH ANSWERS

#### GREATEST ACHIEVEMENT

Still being in medical research after 14 years (I completed my PhD in 2009) seems like an achievement, especially given the funding pressures and my unconventional career path.

The discovery of the KLHL40 gene is my greatest research achievement. It's the cause of a usually fatal muscle disease with onset in utero. Nothing was known about KLHL40 – there was not a single paper published in the literature that mentioned this gene. We contributed to the discovery of mutations in

two related genes that cause this same condition and showed that these genes are part of a novel pathway critical to muscle development and function.

Since then, I've led or contributed to the discovery of over 15 novel human disease genes, many causing severe nerve and muscle diseases which result in death or significant disability in infants and children. Now, families have a genetic diagnosis and can use this knowledge to have preimplantation and prenatal genetic diagnostics for subsequent pregnancies – so that they go on to have a baby free of the family disease.

#### BIGGEST BARRIER

As a relatively new Principal Investigator who oversees an incredible team of researchers, my biggest challenge is securing funding to keep my group together and grow the team.

#### HOPE FOR THE FUTURE

My hope is that we continue the world-wide effort to identify all rare diseases and their genetic cause to support affected patients and families. I also hope that we can build the medical research sector in WA and create a vibrant, successful and kind research culture for the benefit of future Western Australians.





## Professor Jonas Nilsson

### MELANOMA VISIONARY

#### GREATEST ACHIEVEMENT

I am the lab head for and Chair in Melanoma. I'd say

our point of difference is that when we say we're making a difference to patients, we're not talking about ten years but closer to ten months. We're utilising the knowledge that is currently available, from our studies and others, and pushing new treatments to patients in real time.

It's really incredible to be actively involved in patient care through our research and I sit on the multidisciplinary tumour boards in WA. We occasionally make observations and offer a unique insight that can see a patient receive a corrected diagnosis, a more effective treatment and ultimately live a much longer life, because of our actions or input at that time. It's rewarding in real time.

#### BIGGEST BARRIER

We're unique in that we've only recently set up our lab in Australia so the three barriers we're facing right now are steps we need to take to begin patient testing.

Firstly, there are some things we need to solve in the lab to finalise the treatment. Secondly, we need to establish an infrastructure here and we're close to doing that. We have a surgeon onboard to extract tumours from patients and two oncologists who will treat patients and work on clinical trials with us.

Finally, we're incredibly grateful to be funded by the community, supporters of the Kirkbride Chair in Melanoma and the MACA Cancer 200 – if you're reading this, thank you.

Now we're seeking additional support to take the therapy through to patients in local hospitals. We believe this direct-to-patient approach is going to be about 1/10th cheaper than working with a pharmaceutical company, and we're able to do this mainly because of our close proximity to the hospital at Perkins.

#### HOPE FOR THE FUTURE

I think a fourth step will be to get the best possible therapy to as many patients as we can.

That's not just through clinical trials but how can we get this therapy through to clinical practice. As a new researcher to Australia, we don't have the expertise in this area yet.



## Dr Lisa Nilsson

### THE OPTIMIST

#### GREATEST ACHIEVEMENT

I have had many really good moments, but I still think my career highlight is ahead of me. The fact that there are people who get extra time with their families because they were

lucky to participate in some of the clinical trials for something we've developed – you can't beat that.

I'm completely focussed on making a difference for patients with cancer. I'm very hands on in the lab and I'm the steppingstone between visionary ideas and making them happen. .

#### BIGGEST BARRIER

My immediate answer would be that there are no barriers. I think that we do face issues as Jonas has mentioned, but everything has developed very nicely so far with the treatment we're currently working on for melanoma patients.

#### HOPE FOR THE FUTURE

Once we get this therapy into the health care system, I'll be working with the teams in the lab looking at how we can improve it.

Clinical trial data has recently shown that this cellular therapy can have effects in almost 50% of patients with advanced melanoma. Even though this is quite a high number, it still means 50% are not responding, so we want to improve that. We also want to focus on reducing the side effects, and I have some ideas about how we can do this.



# 25 Years Driving Discovery

These are just some of the amazing breakthroughs you have supported over the last 25 years which are keeping families together longer.

**1998**

The Western Australia Institute of Medical Research is established as a collaboration between Royal Perth Hospital, Sir Charles Gairdner Hospital and the University of Western Australia. Under the leadership of Professor Peter Klinken AC (now WA's Chief Scientist), alongside Professor Peter Leedman AO, three teams of 27 researchers begin investigating various facets of cancer.



**2007**

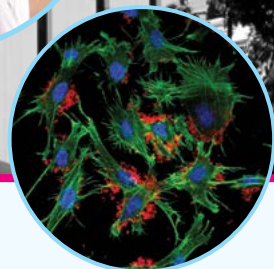
Scientists at the Perkins undertake a major study of over 5500 patients in Australia and the Netherlands to test whether a drug used for generations to treat gout could be used to prevent heart attacks. Results found heart attacks and the need for coronary stenting or bypass surgery reduced by 30% in patients taking low dose colchicine, a widely available and commonly used gout medication.



**2014**

The Perkins moves into a state-of-the-art research facility at the QEII Medical Centre; the Institute is renamed in honour of inaugural Chairman, Harry Perkins; and Professor Peter Leedman AO takes up Directorship.

845 walkers join the inaugural *Walk for Women's Cancer*, raising \$2.2m for research in WA.



**1999**

Wesfamers, under Chair Harry Perkins, becomes a major sponsor with a \$5m donation – at the time, the largest corporate donation to medical research in Australia's history. WAIMR becomes Australia's first multi-campus research institute for adult disease.



**2016**

Perkins scientists develop a new method to tackle aggressive breast cancer, more effective than current treatments, using nanoparticles to deliver anti-cancer drugs right to the tumour.

**2015**

A new treatment targeting chronic kidney disease is developed by Perkins researchers.

**linear**

**2010**

Linear Clinical Research Ltd is established as WA's only dedicated and Australia's most advanced early-phase clinical trials facility. Linear is a step towards helping Perkins researchers move their discoveries from the lab bench to the patients who need them most.



## 2019

Perkins researchers launch a pilot pre-pregnancy screening program that helps parents planning to start a family determine whether they carry or risk passing on over 450 different genes related to severe disease.

## 2023

Perkins researchers receive \$2.5m grant funding to explore the development of a world first software diagnosis package that can identify the early onset of liver cancer relapse, enabling personalised treatment plans.

## 2021

Perkins researchers develop a new technique that cuts infection diagnostic times down from days to 3-5 hours, enabling doctors to identify the best course of antibiotics that will most effectively attack the infection in less time. This research is more important now than ever, as antibiotic resistance grows.



DR ANKUR SHARMA

DR KIERAN MULRONEY



HARRY PERKINS INSTITUTE  
OF MEDICAL RESEARCH

**25**  
YEARS  
DRIVING DISCOVERY

AI PROFESSOR PILAR BLANCAFORT



## 2020

Perkins researchers show that a specific concentration of honeybee venom can induce 100% cell death within 60 minutes on triple-negative breast cancer, with minimal effect on normal cells.

## 2022

A Perkins research team develops a world-first map showing gene activity changes in diverse human brain cells from pre-birth to adulthood, establishing the world's first "atlas" of the human brain development. This work provides a benchmark from which doctors around the world can measure changes in brain development at different life stages.

In its 11th year, the MACA Cancer 200 Ride for Research raises an outstanding \$8.6m for cancer research in WA.



PROFESSOR RYAN LISTER

DR BRENDAN KENNEDY



## 2017

A prototype for a medical device that aims to help surgeons detect microscopic cancer cells during breast cancer removal surgery is built. This will help doctors remove better margins around tumours, reducing the need for repeat surgeries.





# Dates for your calendar



## New Town Toyota Walk for Women's Cancer 29th April 2023

Come and celebrate our 10th Birthday by cheering on over 1000 walkers who are raising money to fight women's cancers. The walkers love the encouragement from the sidelines – shake a pom-pom, high-five a walker or simply holler and hoot as they pass by – 35km is a long way to walk and your involvement really helps to keep the energy levels pumping!

**View the route and plan your cheering station today.**  
**Scan the QR code and search Route or visit: [walkforwomenscancer.org.au](http://walkforwomenscancer.org.au)**



## MACA Cancer 200 Ride for Research Volunteers

If you have some spare time over the weekend of 14 and 15 October 2023 (or even in the two weeks prior!) we need an army of volunteers to help out with the MACA Cancer 200 – Ride for Research. We need marshals, truck packers, cheerleaders and many, many helping hands – you'll be sure to find something to suit your available time, location, and physical ability.

**Scan this QR code and click on Volunteer for more info.**  
**Register to volunteer today: [cancer200.org.au](http://cancer200.org.au)**



## Hear about latest developments in medical research

Throughout the year, you can meet with researchers and scientists who are leading the pack in WA, finding medical discoveries so that families can stay together for longer. Come along to an interactive Q&A event, or join us for the annual Wesfarmers Oration.

**Find us on Facebook & LinkedIn – search for Harry Perkins Institute.**



## Tell us about you!

Thank you for your generous support of our world-leading medical research at the Perkins.

Your continued commitment to WA research is inspiring. Only together can we make the diseases that rob us of our loved ones non-lethal.

You don't have to be a researcher to be part of a breakthrough. We invite you to share your voice and your opinion about what is most important to you and your family. Your answers will be helping shape the future of medical research at the Perkins.

**Please complete the enclosed survey and return to us within 7 days.**  
**Alternatively, to complete the survey online, scan the QR code or visit: [perkins.org.au/yourvoice](http://perkins.org.au/yourvoice)**

