



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

UQ Centre for Clinical Research

15 Year
ANNIVERSARY

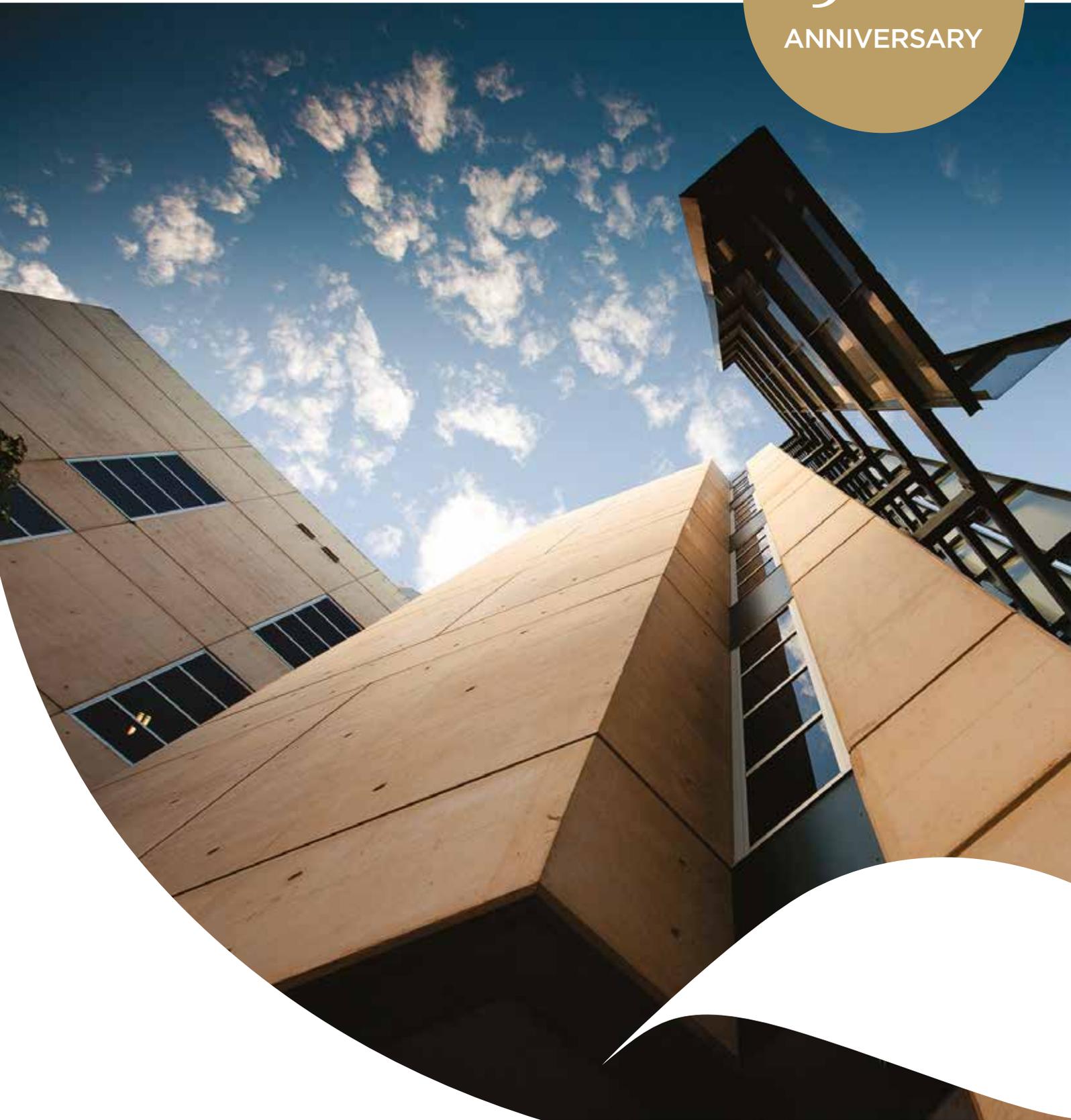




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Statement from the Director



The University of Queensland Centre for Clinical Research (UQCCR) is often thought of as a physical location, but, first and foremost, it is a Centre made of people who are incredibly dedicated to their work, and to the Centre's mission "To improve health through excellence in research, clinical partnerships, mentorship and service".

My own journey is very much tied to UQCCR. I started as a PhD student and am officially recorded as just the second person to be awarded their PhD in UQCCR (7 April 2009). Since then, I have been privileged to work in UQCCR as a researcher, as well as working in the Royal Brisbane and Women's Hospital as a Consultant Clinical Pharmacist. I have been supported in building my team and my career, and am now very honoured to serve as Acting Director of UQCCR.

Within the Centre, we know the importance of our current HDR students and our early and mid-career researchers. It is a focus of ours to help support and develop our future leaders, and this is reflected in our governance and our annual schedule of activities.

The one thing we all know is certain is that change is continual. While UQCCR has had a great first 15 years, we know there is much to do in the future and are excited by it. In the next few years we will see the new Queensland Cancer Centre open next door to us, and will be part of the exciting development of the Herston Quarter, a \$1.1 bn project being managed by Australian Unity.

I applaud all the staff and students in the Centre, and thank them for their contributions over the past 15 years. I trust that you will find this 15th anniversary booklet inspiring and informative, and welcome you to join us on our journey, whether that be as a student, staff member, industry partner or investor. UQCCR has already had significant impacts upon local and international healthcare. Many researchers have benefitted from the career development systems. Indeed, as a former PhD graduate under UQCCR, I have witnessed my own development and that of many others over the last 15 years. We foresee many further important contributions forthcoming that are clinically-focused and transformational in outcome.

Future gains are particularly likely in the areas aligned to our research themes; Brain, Neurology and Mental Health, Cancer, Fertility and Infectious Diseases.

Like so many enthusiastic UQCCR staff, students and collaborators, we look forward to continuing the mission of UQCCR, to improve health through excellence in research, clinical partnerships, mentorship and service.

Professor Jason Roberts

Acting Director

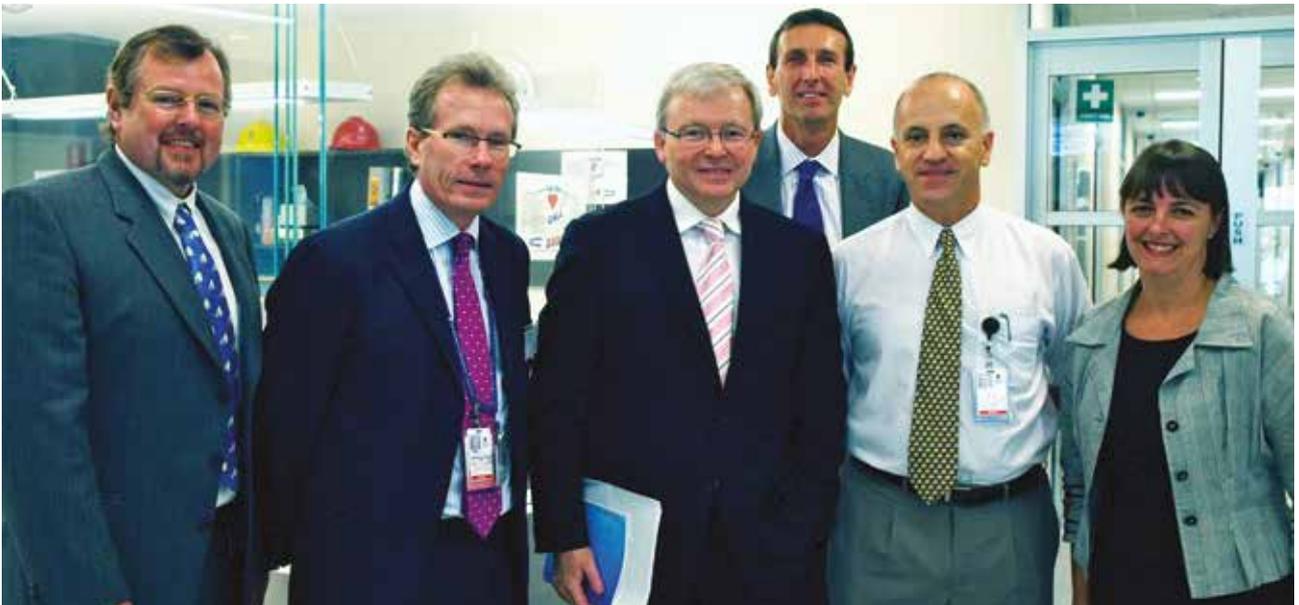
UQ Centre for Clinical Research

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Our History

In 2008, The University of Queensland partnered with the Queensland Government and Atlantic Philanthropies to develop the \$70m UQCCR at what is now known as the Herston Precinct. Collocated with the Royal Brisbane and Women's Hospital, and working in partnership with the hospital and health systems as well as other medical research entities, UQCCR provides state-of-the-art facilities to bring together leading health professionals, clinicians and scientists from around the globe to facilitate innovation and knowledge translation.

Throughout our first fifteen years, UQCCR has sought to develop strong research relationships with clinical professionals, supporting clinician-researchers in identifying and investigating new areas of research. We have sought to collaborate with new partners as they have come online in the Precinct, including the Herston Imaging Research Facility (HIRF), and the Surgical, Treatment, and Rehabilitation Service (STARS), as well as maintaining strong connections across UQ, and particularly in the Faculty of Medicine.



UQCCR Director Prof Murray Mitchell, Dean of the Faculty of Medicine Prof Nick Fisk, Prime Minister Kevin Rudd, and senior Queensland Health staff touring UQCCR, 2010.



The future UQCCR site, just prior to commencement of building in Oct 2006.



Aerial view of the newly completed UQCCR in early 2008.

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Our Research Impact

UQCCR has been responsible for many meaningful healthcare impacts in its first 15 years. Here, we provide exemplar research case studies from our research themes Brain, Neurology and Mental Health, Cancer, Fertility and Infectious Diseases.



Brain, Neurology and Mental Health

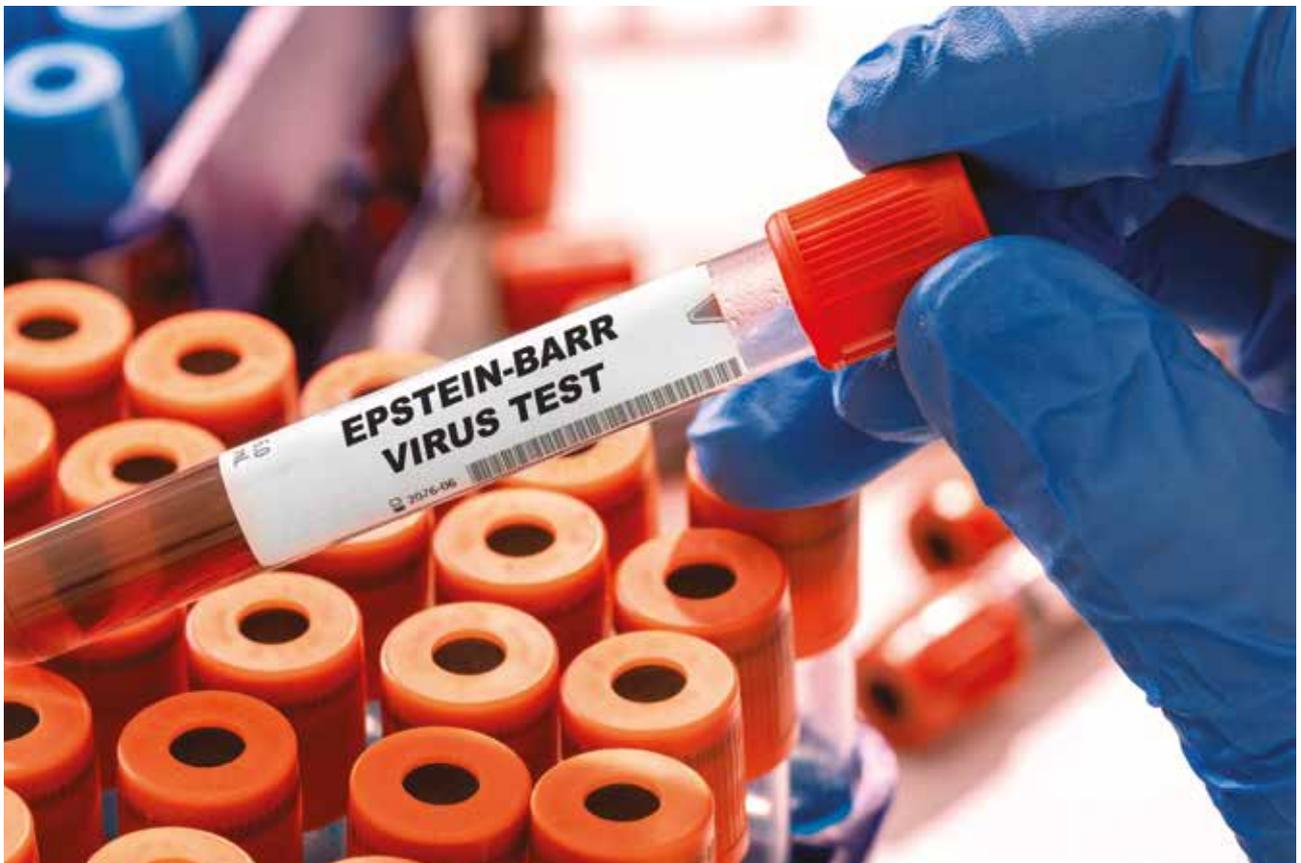
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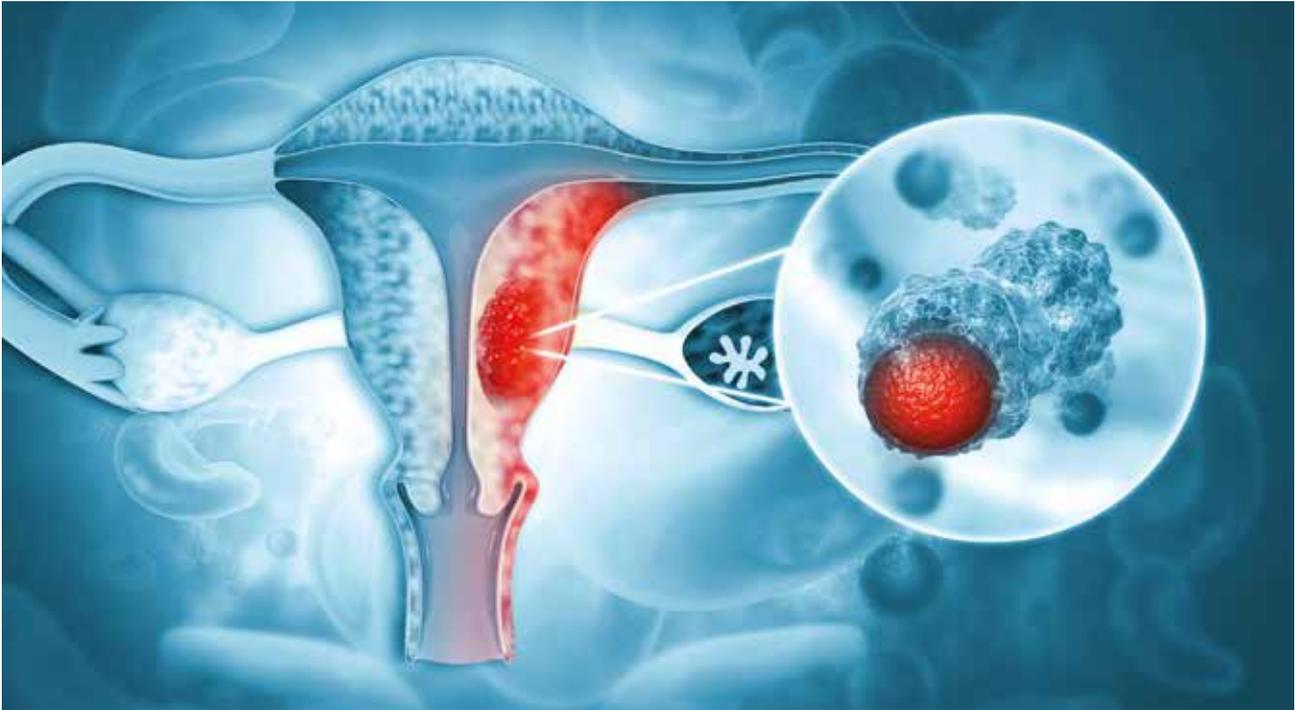
Multiple sclerosis (MS) is an incurable, progressive neurological condition which affects over 2.8 million people worldwide. Our multidisciplinary research group, which incorporates the expertise of clinical neurologists, research nurses, a laboratory scientist and a research administration officer, are undertaking landmark research to explore whether novel treatments targeting Epstein-Barr virus (EBV) are safe and effective in people living with MS.

EBV is the virus that causes glandular fever. In 2003, our group founder Emeritus Professor Michael Pender who retired in 2021, proposed the theory that EBV infection leads to the development of MS in susceptible people. Since then, increasing evidence has supported this theory and it is now internationally recognised that EBV plays a critical role in the development of MS. Based on this theory, we carried

out world first clinical trials of a treatment which aims to boost the immune response to EBV, called 'adoptive T cell immunotherapy', in people living with MS.

In 2017, with the generous support of MS QLD, we published results from our Phase 1 trial showing that adoptive T cell immunotherapy was well tolerated and that 70% of treated people showed an improvement. In 2021 we published the remarkable findings that there was sustained improvement in some of these people for up to 3 years after receiving the experimental therapy. These exciting outcomes attracted world-wide interest and we are now the lead Australian site of an international Phase 2 clinical trial of EBV-specific T cell therapy in MS sponsored by Atara-Biotherapeutics. The encouraging preliminary results have been presented at international conferences and the trial is projected to remain active until 2025. We are hopeful that this work will lead to a safe and effective treatment and possibly a hope of cure for people living with MS.





Cancer

Peter Simpson

The Molecular Breast Pathology research group, led by Prof Sunil Lakhani, arrived as the doors to UQCCR opened back in 2008. Together with A/Prof Peter Simpson (now Group Leader in Cancer Genomics and Head of the Cancer Theme) and others, we have established the Brisbane Breast Bank. The Bank houses tissue and blood biospecimens from consenting patients attending the Royal Brisbane & Women's Hospital (RBWH) and has been used in research projects run by the team as well as collaborators across the globe. In 2013 we established the Circ.Br cohort study (Circulating biomarkers of relapse in Breast cancer), in which we collect blood samples and quality of life survey data from patients at regular time points during their clinical follow up. This resource will help investigate biomarkers for the early detection of breast cancer recurrence and clinical interventions that might improve patients well-being.

Our group specifically research special types of breast cancer, including invasive lobular carcinoma and metaplastic breast cancer; breast cancer that runs in families, including the implementation of a critical drug (PARP inhibitors) into clinical practice through involvement in the international Olympia clinical trial; as well as developing nano-based medicine for novel ways to improve the treatment of patients with metastasis of disease to the brain.

A/Prof Simpson and A/Prof David Fielding (Director of Thoracic Medicine, RBWH) are also running the Debutant clinical trial; which was established to improve the molecular diagnostic testing workflow for patients diagnosed with advanced lung cancer.

Fertility

Hayden Homer

In Australia, 1 in 18 children (or at least 1 child in every classroom) is born through assisted reproductive treatment (ART), principally in vitro fertilisation (IVF). More than 111,000 ART treatments were performed in 2021, a 16% increase compared with 2020. Since virtually all IVF in Australia is undertaken in the private sector at a cost of ~ \$12K per cycle with roughly half rebated by Medicare, the collective public cost is substantial. With at least 1 in 4 women undergoing IVF being over 40 years of age, poor oocyte quality is the major stumbling block to success often requiring multiple treatment cycles to achieve success. The cornerstones of improving treatment efficiency and reducing fertility costs therefore centre on developing interventions for improving oocyte quality and for identifying the most viable embryos. Our lab was established at UQCCR in 2016 to investigate oocyte and



embryo biology and has become a recognised leader in this field both nationally and internationally. We have published multiple groundbreaking papers in top tier journals including Nature Communications, Cell Reports, Journal of Cell Biology, EMBO Reports and Human Reproduction Update amongst others. We were the first to identify that deterioration of the NAD⁺ pathway in oocytes with ageing underpins declining quality and importantly, that this pathway can be rejuvenated via oral treatment. Due to the immense therapeutic potential of this intervention for treating the single biggest challenge facing human fertility and IVF success, this paper was widely covered by over a dozen media outlets including Channel 7 News. We have also recently discovered a novel facet of embryo development that can be utilised to non-invasively identify embryos with the best potential during IVF. Collectively, our discoveries over the past 8 years are well positioned to improve IVF success thereby markedly reducing public costs and improving outcomes for families.

Infectious Diseases



Patrick Harris

Bacterial antimicrobial resistance (AMR) is a leading global public health threat. In 2019, an estimated 4.95 million deaths globally were associated with bacterial AMR. Economic modelling predicts that by 2050, AMR will have cumulatively cost the global economy more than US\$100 trillion and be associated with 10 million deaths – more than currently attributed to cancer or road traffic accidents.

Our research team's focus explores the incidence, distribution, prevention and treatment of antibiotic resistant infections. Through our research, our mission is to create and lead clinical and scientific discoveries that provide globally translatable solutions to aid in the battle against AMR.

In 2018, we successfully published results on the largest randomised control trial to date comparing treatment options for serious bloodstream infections caused by a type of highly-resistant bacterial strains, called extended-spectrum beta-lactamase (ESBL) producers. This study (the MERINO trial) enrolled 391 participants, across 32 sites spanning 9 countries, which demonstrated an increased risk of mortality in patients treated with a commonly prescribed antibiotic (piperacillin-tazobactam). These findings were highly influential and rapidly influenced international guidance on optimal antibiotic treatment for these types of infections.

Using the outcomes observed in the trial, extrapolated to the global burden of these common infections, it could be estimated that:

1. Using meropenem instead of piperacillin-tazobactam for 13 million serious infections in high to middle income countries, would save approximately 604,500 lives annually
2. Introducing meropenem into low-income countries where 37 million serious infections occur, would save an additional 3.7 million lives annually



Patient Informed Research

Working with consumers and community representatives, our research is informed by people with lived experience and the questions that arise in the health care setting.

We specialise in taking research from the lab bench to the bedside to help provide better treatment and results for patients.



Industry Partnerships

Stuart Robertson

As the CEO of OPN365 enterprise and software solutions, Stuart Robertson partners with UQCCR to advise on the development of technologies which will support people with dementia. But, more than that, as someone living with young onset Parkinson's disease, Stuart is in a unique position to guide researchers on how people living with dementia will be using their products.

As a member of the Centre's Dementia and Neuro Mental Health Research Unit's consumer and community involvement group, Stuart says its essential that people with

lived experience have input into clinical research and product development.

"It's about having an ability to guide or question," he explains.

"Even just simple things sometimes, I'm able to give it a view and provide an interface to a larger audience of people living with Parkinson's.

"There are lots of people in the Parkinson's community, who are not comfortable talking about this sort of stuff in an open forum. I see my role as representing those people as best I can, to make the research and products created appropriate and easier for people to use."



Gynaecological Cancer

Creating a better future after cancer

When Tammy found out that she might need to have a hysterectomy aged 36 she knew her dream of having a family was at risk.

“My partner and I had been together for 16 years. We tried to have children but it never happened for us. Then we’d sold a house and had enough money for IVF but knew it was our last chance,” Tammy said.

“As we were going through the standard checks, I had several polyps removed. One of these had atypical complex hyperplasia cells, which can lead to endometrial cancer.

“Before this I didn’t even know that cancer of the lining of the uterus was possible. I have Polycystic Ovary Syndrome, so I knew I had a higher risk for other cancers but not that.

“The standard treatment would have been a hysterectomy. We had put everything into trying to get pregnant, it would have all been in vain.”

Endometrial or uterine cancer is the most common gynaecological cancer in Australia, with around 1900 new



Tammy with her son Jasper and partner.

cases being diagnosed every year. The standard treatment for early-stage endometrial cancer is a hysterectomy, removal of the womb, but this isn’t safe for everyone. What’s more, for the small percentage of patients being diagnosed under 40, the idea of losing their fertility can be a serious concern.

Tammy was referred to the Queensland Centre for Gynaecological Cancer, where she was offered a place in the feMME trial, a groundbreaking study into whether endometrial cancer could be treated less invasively using an IUD.



Dr Eva Baxter

Dr Eva Baxter, of UQCCR, explained how the team hoped the trial would lead to kinder treatment options for patients, without the need for surgery. “Often when we speak about cancer treatment we only speak about survival,” she said.

“But, for many people like Tammy, the main concern is not whether they will survive but the quality of the life they will have.”

“In the feMME trial, we challenged the concept of radical surgery for patients who could possibly be spared. This meant that younger patients with early-stage cancer could retain their fertility, and potentially go on to complete their families.”

Tammy’s treatment was successful, as was her IVF, and she now has a son Jasper who has just turned four. But she knows that her story is still unusual. “I’ve now met women who never had that choice and had to have hysterectomies in their 30s,” she said.

“It’s very sad and I’m so relieved that we had a choice. I hope the trial I was part of leads to further study, which could help other people in my position.”



Our Staff

Our research is dedicated to improving the lives of people. These people include the researchers at UQCCR. In this section, we acknowledge the excellent career development support from a small selection of our brilliant researchers at UQCCR.



Julie Wixey
Brain, Neurology
and Mental Health

NHMRC Fellow at UQCCR
(mentored by Professor
Paul Colditz).

I am a Senior Research Fellow
at the Perinatal Research
Centre, UQCCR and have
been an academic in this

field of research since 2015. Strong mentorship from Prof Paul Colditz, Director of the Perinatal Research Centre and practising Neonatologist, has enabled me to successfully develop an independent research program examining mechanisms of brain injury and neuroprotective treatments for fetal growth restriction. As a part-time researcher for the last 8 years until 2023, I have obtained >\$3.5 million in research grants from National funding bodies such as NHMRC (CIA, CIE) and Cerebral Palsy Alliance (CIA) as well as securing an NHMRC Investigator grant (2023-2027). This would not have been possible without the unwavering support from Prof Paul Colditz, the collegial team at the Perinatal Research Centre, UQCCR colleagues and UQCCR research support team. I was recently thrilled and honoured to receive the 2022 Researcher of the Year UQCCR Director's Award and aim to give back to the research community at UQCCR as much as I have received.



Fekade Sime
Infectious Diseases

I am an NHMRC Emerging
Leadership Fellow at UQCCR
from 2021 – 25. Following my
PhD (Oct 25, 2015), I have held
a UQ postdoctoral research
fellowship since 2016 and
served as the Laboratory
Manger for the Centre for

Translational Anti-infective Pharmacodynamics at UQ School of Pharmacy (2016- 20). I have increasing national and international recognition through research collaborations and publications with international collaborators. I feel fortunate to have been mentored at UQ by Professor Jason Roberts leading to being successfully awarded a NHMRC Investigator grant. I am currently the lead for the in vitro infection model laboratory at UQCCR, where I manage the experimental work for a number of reach projects including those funded by the NHMRC. In my role, I have had the opportunity

to establish a new research capacity in Queensland (the second in Australia) taking the lead technical role in setting up an advanced infection model for in vitro optimisation of antibiotic dosing (the hollow fibre infection model). I also currently supervise eight PhD students (five as Principal, three as Associate). I have supervised 5 PhD students to completion (co-supervisor) and 7 honours students to completion (2 as principal, 5 as associate).



Carlos Salomon
Cancer

I grew up in a small town on
the edge of Chile's Atacama
Desert, living in a house with
three generations of women.
Over a decade ago, I came to
Australia with the intention of
assisting in the establishment
of a Quality Management

System within UQCCR. Initially, I planned a 10-month visit, that has now evolved into a journey spanning a decade and is still ongoing. I have nurtured my entire research career at UQCCR, beginning as a PhD student in 2012. Since then, I have progressed through roles as a postdoctoral fellow, senior research fellow, and currently as an Associate Professor within UQ. At UQCCR, I serve as the Chair of the Research Committee and also a member of the UQCCR Executive team. Additionally, I contribute to the Faculty of Medicine Research Committee and spearheaded the Medical Research Future Funding working group. I am a globally recognised authority in Biomarker discovery, leading an international collaborative research network dedicated to translating extracellular vesicle research into tangible clinical applications. This research program has secured substantial funding exceeding \$10 million from national, commercial, and philanthropic entities. I have an extensive publication record with over 170 papers. Furthermore, I have guided and supervised 27 students to successful completion. Currently, my primary focal points encompass two major undertakings. The first is the establishment of the Ovarian Cancer Early Detection Alliance, which has yielded the development of OCRF-7—a groundbreaking test for the early identification of ovarian cancer. Impressively, OCRF-7 demonstrates a classification efficiency of 98%. The second involves collaboration with more than 60 researchers across UQ to establish the UQ Centre for Extracellular Nanomedicine.



Yunan Ye
Fertility

It takes a village to raise a student. My journey as a PhD student at UQCCR has been a rich and rewarding experience supported by the nurturing UQCCR village. It is unique here that colleagues wear multiple hats as researchers,

clinicians, and mentors, which broadened my vision beyond an initial project in the mouse model. Inspired by the translational success stories at UQCCR, my supervisor Professor Hayden Homer and I took our research further into clinical translation. We obtained a large human dataset from a local fertility clinic, significantly expanding the impact of our research.

UQCCR not only fostered my growth as a versatile researcher but also equipped me with transferrable skills through the process of winning the 3MT competition and organising a student retreat. Throughout these “once in a lifetime” endeavours, the UQCCR community guided me and cheered me on every step of the way. The ECR, MCR, RDOs at UQCCR were always ready to provide feedback and be present for the big day. The wellbeing committee’s gratitude tree and the Twitter team’s recognition of achievements fostered a sense of belonging beyond the centre. UQCCR is a truly special place where people uplift each other, and I pay it forward by guiding the next generation of student representatives and 3MTers.



Nadeeka Dissanayaka
Brain, Neurology
and Mental Health

I established and lead a world-class translational clinical research program at UQCCR focused on Ageing, Mental Health and Neurodegenerative disease. Resources and mentorship

provided at UQCCR have allowed me to successfully obtain external funding via 3 fellowships, and 22 grants. I am currently leading 2 large MRFF national programs (>\$3.6 million) consisting >25 multidisciplinary investigators each.

I have trained >100 postgraduates in research at UQCCR. Under my supervision, 23 students completed thesis, and >60 clinical psychology postgraduate interns and medical students were involved in research. Our students have progressed their careers to become academics, and medical and allied health clinicians.

I have harnessed my leadership skills to establish and lead a number of strategically significant projects at UQCCR aimed to increase consumer and community engagement. I established and lead the UQCCR Consumer and Community Involvement Committee. Partnered with Dementia Australia and Dementia Advocates, I established and direct the Dementia Friendly UQCCR Initiative, where UQCCR was formally recognised as the first Australian Research Centre to work towards becoming a Dementia Inclusive community. In 2021, I received the UQ Faculty of Medicine Future Leaders Award.



Andreas Obermair
Cancer

In 2023, QCGC Research celebrates 20 years of clinical research that has improved treatment for women with gynaecological cancer.

Despite being a small research unit, on average we receive one NHMRC grant every five

years. QCGC Research is operated on a shoestring budget and the entire team is always on the lookout for new funding opportunities to explore more gynaecological cancer research ideas.

After having made a heart wrenching decision to downsize my research team in 2012, I founded a charity, the Cherish Women’s Cancer Foundation, so it would provide an alternate source of funding for gynaecological cancer research. Since then, Cherish has awarded more than \$1 million in gynaecological cancer research grants to UQ. These grants enabled us to commence small studies that created data, built momentum and ultimately led to more successful competitive grant applications.

We have diversified our clinical research from purely surgical trials to include a molecular biology and biomarker arm to each trial. We now are fortunate to have two molecular scientists (Drs Baxter and West) working at QCGC Research. While I hope, both can learn from my experiences, guidance and counsel, I have no doubt that I will learn a great deal from them in return.

I appreciate the impact mentoring had on the success throughout my career. I would like to acknowledge the enormous impact of Dr Tony McCartney (Perth, WA) on my laparoscopic surgery; Professor Alex Crandon (Brisbane) on my open surgery; and Professor Sevelde from Vienna (Austria) on my research capabilities. I will forever remember their patience in training me.



Claire Rickard
Infectious Disease

Working as a nurse at the (then) Royal Brisbane Hospital in the 1990s, I had no idea that one day I would be working in the building next door (UQCCR) as a leading researcher. However, the opportunity to work as a

research coordinator with Emeritus Professor Jeffrey Lipman, then Director of Intensive Care and a strong proponent of UQCCR's establishment, introduced me to clinical research, and I have never looked back.

Prof Lipman showed me this hidden world, of what was possible within our usual busy clinical practices, and that was to add on a layer of research activity, so that we fully use that opportunity to improve care for tomorrow's patients, while we look after today's patients.

After completing my PhD studies, I built a strong research network called the Alliance for Vascular Access Teaching and Research or AVATAR (avatargroup.org.au). Professor David Paterson (then UQCCR Director) was a key mentor over the years in the infectious disease space, and when he told me about the exciting new Herston Infectious Diseases Institute or HeIDI, I couldn't resist.

Joining UQCCR in 2021 as a conjoint Professor of Infection Prevention and Vascular Access with HeIDI and UQ's School of Nursing, Midwifery, and Social Work, I quickly secured a prestigious NHMRC Investigator (Senior Leader) 5-year Fellowship for an adaptive platform trial to prevent bloodstream infections associated with vascular catheters. I now lead a team of talented nursing researchers and students focussed on improving health services and patient experiences.



Amy McCart Reed
Cancer

I have been fortunate to have been mentored by both Prof Sunil Lakhani and Associate Professor Peter Simpson along my journey from post-doctoral researcher through to my current position as a Senior Research Fellow and Associate

Professor. I am now in a position where I can also mentor emerging researchers, and I am working hard to ensure they get the same opportunities and support I was offered. The broader UQCCR framework for career development has continued to be a source of support and encouragement, including through nominating me for leadership development courses both within and external to UQ. The opportunity to participate in a number of different committees in various capacities, including as Chair, has afforded me excellent exposure to a range of topics as well as personal development. UQCCR promotes a strong team culture and invites researchers at all levels to participate in the strategic direction of the Centre, allowing me to absorb leadership

skills demonstrated at a high level. The established clinical links at UQCCR have allowed me to extend and cement my collaborative network, ensuring a multi-disciplinary approach to addressing clinical problems, resulting in a competitive research output. I look forward to continuing my role in Cancer research at UQCCR and developing the next generation.



David Whiley
Infectious Disease

Prior to 2015, I was a researcher within the Queensland Paediatric Infectious Diseases Laboratory at the Queensland Children's Hospital. However, my research trajectory took a sudden upturn when I

successfully negotiated to join Queensland's powerhouse antimicrobial resistance (AMR) researchers (including Paterson, Roberts and Harris) at UQCCR. Since initially joining UQCCR as a group leader with only 2 staff and a NHMRC early career fellowship, my career and group have thrived. I am now the UQCCR ID theme leader, lead a team of 15 staff and students, and oversee a dynamic diagnostics research and development program spanning 3 Brisbane institutions. My grant successes include being CI on NHMRC's and ARC's premier schemes; eg. NHMRC CRE (2019-23; GNT1153647), ARC ITRP hub (2020-24; IH190100021) and NHMRC synergy (2020-24; GNT1185377), in addition to extensive industry collaborations. A key focus of my activities is "giving back" via ECR/MCR mentoring and supporting career development to independence. I leverage all of my grants, assets, and contacts to provide training/mentoring opportunities to postdoctoral scientists and clinical staff locally, nationally and overseas, including in industry. In recognition of this, I was fortunate to be awarded the UQCCR Early Career Supervisor of the Year award (2018) and subsequently the Mid-Career Researcher Supervisor of the Year award (2022).





Jason Roberts
Infectious Disease

I am very proud of my long association with UQCCR. I started as a PhD student and am listed as the second ever graduate of the Centre. I have been privileged to be mentored by Emeritus Professor Jeffrey Lipman and

to learn from other outstanding leaders like former UQCCR Director, Professor David Paterson. I am now the Acting Director of UQCCR and get to see first hand the great work so many of my colleagues do.

Support for clinician-scientists is an important function of UQCCR. My professional background is as a clinical pharmacist and researcher who specialises in optimising antimicrobial dosing for the critically ill. I am an NHMRC Leadership Fellow (with continual NHMRC Fellowships for >15 years), and am the Director of the NHMRC funded Centre of Research Excellence RESPOND, which focuses on antimicrobial dosing. I am also Interim Director of the Herston Infectious Diseases Institute (HeIDI). Via the development provided through UQCCR, I have been fortunate to enjoy

research success and have now authored over 600 academic papers and book chapters, and led teams that have been awarded over \$55m in competitive grant funding, and have supervised over 20 PhD students to completion.

Like many others in UQCCR, I believe in giving back to the education and health systems, and see leadership roles as opportunities to give back in more significant ways.



10 year club currently working in UQCCR (not all pictured)

Judith Greer, Peter Csurhes, Paul Colditz, Jun Yan, Suzie Parker, Aven Lee, Amy Reed, Steve Wallis, Kym Lowry, Jenny Ordonez, Andrew Dalley, Nadeeka Dissanayaka, Sunil Lakhani, Jason Roberts, Peter Simpson, Pam McCombe, Luminita Vlad, Maxine Preston, Vicki Allen, Nancy Brown, Tiffany Harris Brown, Tiffany Au, Carlos Salomon Gallo, Lisa Dingwall, Martin Lavin, Chris Bahrend, Jeff Lipman, Roheen Gill, Aine Farrell, Frank Gardiner, Magtouf Gatei, Elizabeth Arnold, Yvonne Eiby, Julie Wixey, Minyon Avent, Colleen Niland, Jason Roberts

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Our Students

A core purpose of any facility in a university is to develop high quality students and provide an excellent learning experience. All the staff in UQCCR take this responsibility very seriously, and we are very proud of the many students who have chosen to undertake research at UQCCR.

Currently over 80 students are doing research at UQCCR, including >60 Higher Degree by Research (HDR - PhD or MPhil) students, coursework masters students, honours students, undergraduate research project students, and students from the Doctor of Medicine (MD) program wanting to experience clinical research. These students come from a diverse range of backgrounds, with a mix of domestic and international students, and both basic scientists and clinicians. In addition, we have several international visiting students who choose to come to study under researchers at UQCCR for electives within their degrees at their home universities. UQCCR also hosts groups of high school students each year, both from high schools around Brisbane, but also from Singapore.

We have a focus on providing a great student experience, including holding Student Retreats, an annual HDR symposium, days celebrating important festivals from the home countries of our students, regular get-togethers for students (organised by our active Student Committee), and a keen focus on student mental health and well-being. As this report is being finalised, we are finalising preparations for the 2023 Student Retreat, being held at Maroochydore on the Sunshine Coast, which will be attended by nearly 50 participants from all our themes and groups.

One of our current international HDR students, Yunan Ye, was the 2022 UQ winner of the 3 Minute Thesis (3MT) competition, in which students have to explain their thesis in easily understandable language within 3 minutes, one of the many development activities that our students are encouraged to engage in.

The COVID years 2020 and 2021 were challenging for many of our students, not only due to limitations on access to laboratories and to patient cohorts and clinical samples, but also because many students were isolated from family and friends in countries that were significantly affected by COVID. The UQCCR Student Committee were very proactive during this time, organising events such as zoom get-togethers, a support group for parents having to deal with teaching their kids at home, a “graduation ceremony” at the end of each semester for those finishing up (while the official graduation ceremonies were on hold), and more light-hearted events such as the UQCCR Olympics, held during the Tokyo Olympics.



Participants at the 2022 UQCCR Student Retreat (L-R) Pragati Lodha, Amanda Ling, Puteri Zamri, Peytn Stokes-Marshall and Tam Nguyen.



Visiting high school students from Singapore.



Break out group at the 2022 UQCCR student retreat: Vaibhavi Joshi, Yunan Ye, Sarah Gollschewski and Grace Xu.

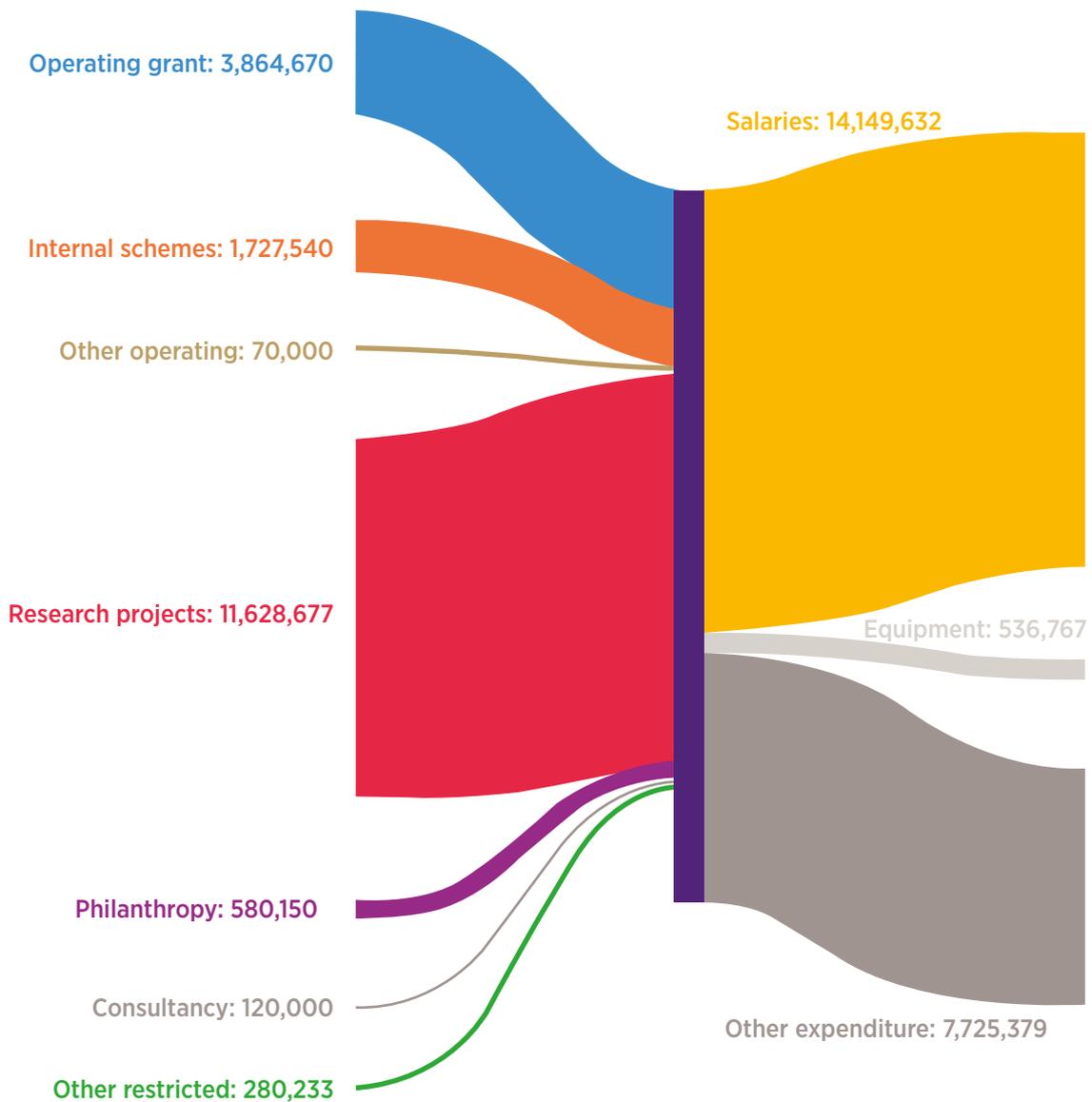
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Our Resources

UQCCR is very fortunate to occupy a dedicated, purpose-built facility with PC2 labs, a clinical floor, and state-of-the-art scientific instruments. We receive core funding from the university to cover fixed costs (core staff salary and basic infrastructure costs) and generate most of our

income via competitive research grants, consultancy income and philanthropic funding. With upwards of 200 staff and 80 HDR students. The Centre is a very busy, and growing, research enterprise.

UQCCR 2022 income and expenditure





The following pages provide information on some of the unique facilities within UQCCR.

Mass Spectrometry Facility

From the identification of metabolites in clinical samples to the proteomics profiling of sea snake venom, the UQCCR mass spectrometry facility has been supporting researchers in their respective fields since 2012. In the early days, proteomics-based workflows including the identification of proteins in complex mixtures was the most requested service that the facility completed. As the years progressed, the request for additional workflows expanded to include metabolite and lipid identification, targeted quantitation of analytes (peptides, drugs, metabolites) and even intact protein analysis.

The Mass Spectrometry Facility was initially funded by the Super Science initiative in 2012 which enabled state-of-the-art equipment to be purchased and staff to be employed as part of the QLD node of the Therapeutic Innovation Australia (TIA). Since then, the facility has evolved to support researchers and workflows by the procurement of additional LC-MS/MS systems including our most recent purchase of the ZenoTOF 7600 LC-MS/MS system.

In 2013, the facility obtained ISO/IEC 17025 Research and Development accredited program for LC-MS and LC-MS/MS workflows. Assessments for technical competency is completed every 18 months by the National Association of Testing Authorities (NATA) and the facility continues to maintain our accreditation since its inception at UQCCR.

Fun Facts for the UQCCR Mass Spectrometry Facility from October 2015 to August 2023 (when records were started).

- **Total number of projects run through the facility:**
 - o Over 290 projects
- **User Affiliations (ie. Researcher group location)**
 - o Faculty of Medicine/UQCCR – Over 2030 requests logged
 - o UQ – Over 520 requests logged
 - o External Researchers – Over 420 requests logged
- **Total number of instrument hours:**
 - o Over 100,000 instrument hours recorded
- **Average number of staff employed:**
 - o 1.6 FTE
- **Total number of instruments housed and when they were acquired:**
 - o 2015
 - Mass Spectrometers (1 x QTOF; 2 x QQQ; 1 x MALDI TOFTOF)
 - 3 x Liquid chromatography systems (2 x Nanoflow; 1 x Microflow)
 - o 2016
 - 4 x Liquid chromatography systems (2 x Nanoflow; 1 x Microflow; 1 x UPHLC)
 - o 2018
 - 5 Mass Spectrometers (1 x QTOF; 3 X QQQ; 1 x MALDI TOFTOF)
 - 5 x Liquid chromatography systems (2 x Nanoflow; 1 x Microflow; 2 x UPHLC)
 - o 2019
 - 6 Mass Spectrometers (2 x QTOF; 3 x QQQ; 1 x MALDI TOFTOF)
 - 6 x Liquid chromatography systems (2 x Nanoflow/Microflow; 1 x Microflow; 3 x UPHLC)
 - o 2022
 - 7 Mass Spectrometers (3 x QTOF; 3 x QQQ; 1 x MALDI TOFTOF)
 - 6 x Liquid chromatography systems (2 x Nanoflow/Microflow; 1 x Microflow; 3 x UPHLC)

Clinical Trials Support Unit

Level 3 of UQCCR is home to the Clinical Trials Support Unit (CTSU), a purpose-built clinical trial (CT) facility for the conduct of Phase I to Phase IV drug and device trials, including commercially-sponsored and Investigator-initiated trials. Since the CTSU first opened its doors fifteen years ago, it has facilitated the conduct of no less than 127 clinical trials, spanning Motor Neurone Disease; Multiple Sclerosis; Parkinson's Disease; Huntington's Disease; Progressive Supranuclear Palsy (PSP); Fredreich's Ataxia; Alzheimer's Disease and Neuro-Psychiatry. More recently, trials in the field of Infectious Diseases and, notably, a first-in-humans study trialling the novel brain delivery of a common MRI contrast agent, have also been undertaken.

Conducting clinical trials is vital to UQCCR's success, and they can be very difficult to do well. Research has shown that:

- 85% of CT's fail to retain enough participants
- 80% of CT's fail to finish on time
- 50% of sites enrol 1 or no participants in their studies
- 30% of participants drop out of a trial

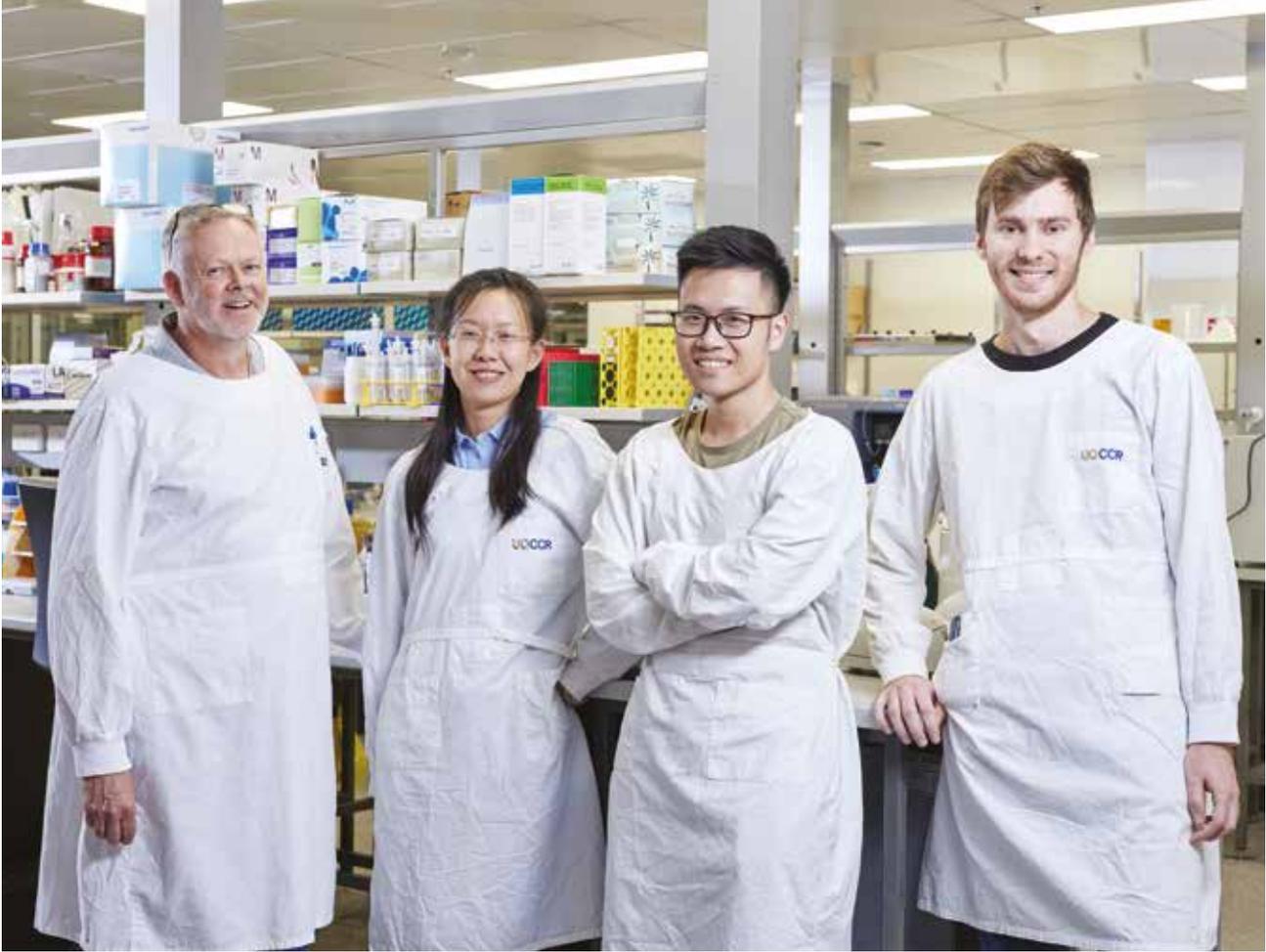
In our 127 clinical trials, an impressive 14,337 people have participated in the research studies conducted in the CTSU. This equates to:

- Thousands of hours in start-up meetings, site initiation visits, Budget negotiations, Contract Execution, HREC and Governance applications and Good Clinical Practice and Protocol-specific training

- Some 140,000 hours spent in pre-screening potential participants
- During CTSU visits, on average:
 - 290 litres of blood drawn
 - 10,000 urine samples collected and tested
 - Over 14,000 medical histories and physical assessments conducted
 - Over 30,000 12-lead ECG's and sets of vital signs taken, and validated questionnaires administered
 - Some 8000 doses of Investigational Product administered
 - Half a million pages of source documents completed
 - Thousands of Monitoring Visits, and
 - Ongoing efforts in data cleaning and query resolution to ensure accurate information is provided

What hasn't changed in 15 years since the CTSU has been in operation is the level of enthusiasm and dedication the staff have for their work and responsibilities. This is at the heart of what we do.



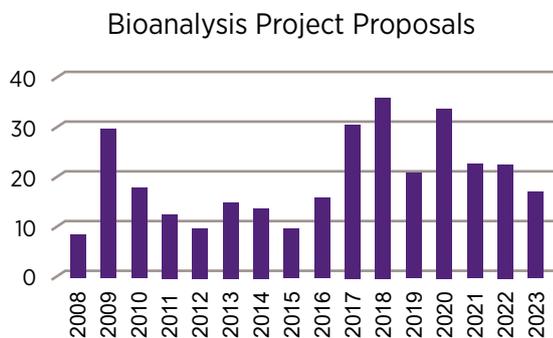


Antimicrobial Optimisation Bioanalysis Laboratory

The Antimicrobial Optimisation Bioanalysis Laboratory specialises in creating novel methods for measuring drugs in clinical samples. These bespoke assays are tailor-made to the needs of clinical researchers and enable research that may not be otherwise achievable.

The bioanalysis laboratory has amassed a catalogue of assays to incorporate 124 separate analytes, including 49 different antibiotics (from amikacin to vancomycin), COVID drug remdesivir, analgesic morphine and sedative midazolam.

This specialised service remains in high demand with 319 projects under consideration since mid-2008. Approximately 60% of proposed projects go ahead.



Some are small in bioanalytical scope but large in impact, such as our collaboration with Dr Danny Tsai of Alice Springs Hospital. Our work has helped to launch PhD students at the start of their research career, to providing industry partners

with specialised services. On the larger end of the scale we have also conducted massive bioanalytical studies requiring analysis of multiple drugs from hundreds of patients from far-flung hospitals as a critical component of multinational clinical studies (DALI from 2009, ASAP ECMO from 2011, SAFE ICU from 2016, BLING III from 2017, PNEUDOS from 2019).



Laboratory Facilities

A research centre like UQCCR could not function without exceptional staff supporting it. From the reception desk and loading dock on level 2 to the Director's Office on level 8, the Centre has a dedicated and hard working professional staff team supporting it. Several of the professional team have been with the Centre for over ten years.

Dedicated facilities include the Clinical Trials Support Unit and the Mass Spectrometry Facility along with a wide range of specialist instruments looked after by our facilities team of Dr Maxine Preston, Dr Tracey Harvey, Dr Dominka Butkiewicz, and Dr Simon Cridland.

These include the Nanosight, Bioplex suspension array system, IncuCyte cell imaging system, Gallios Flow Cytometer, the Histology suite, an array of confocal and other microscopes, Zeiss imager, -20 degree and -80 degree freezers as well as walk in freezers. Dominika also oversees external NATA accreditation for the Centre, while Tracey takes on OHS responsibilities.



Facilities team of Dr Maxine Preston, Dr Dominka Butkiewicz and Dr Tracey Harvey.



Some of the professional staff supporting UQCCR.



Our Supporters

We wish to thank the many loyal donors to the UQ Centre for Clinical Research over the last 15 years. Your generosity makes our work possible, and enables us to continue to make research discoveries ensuring longer, healthier lives for you and your loved ones.

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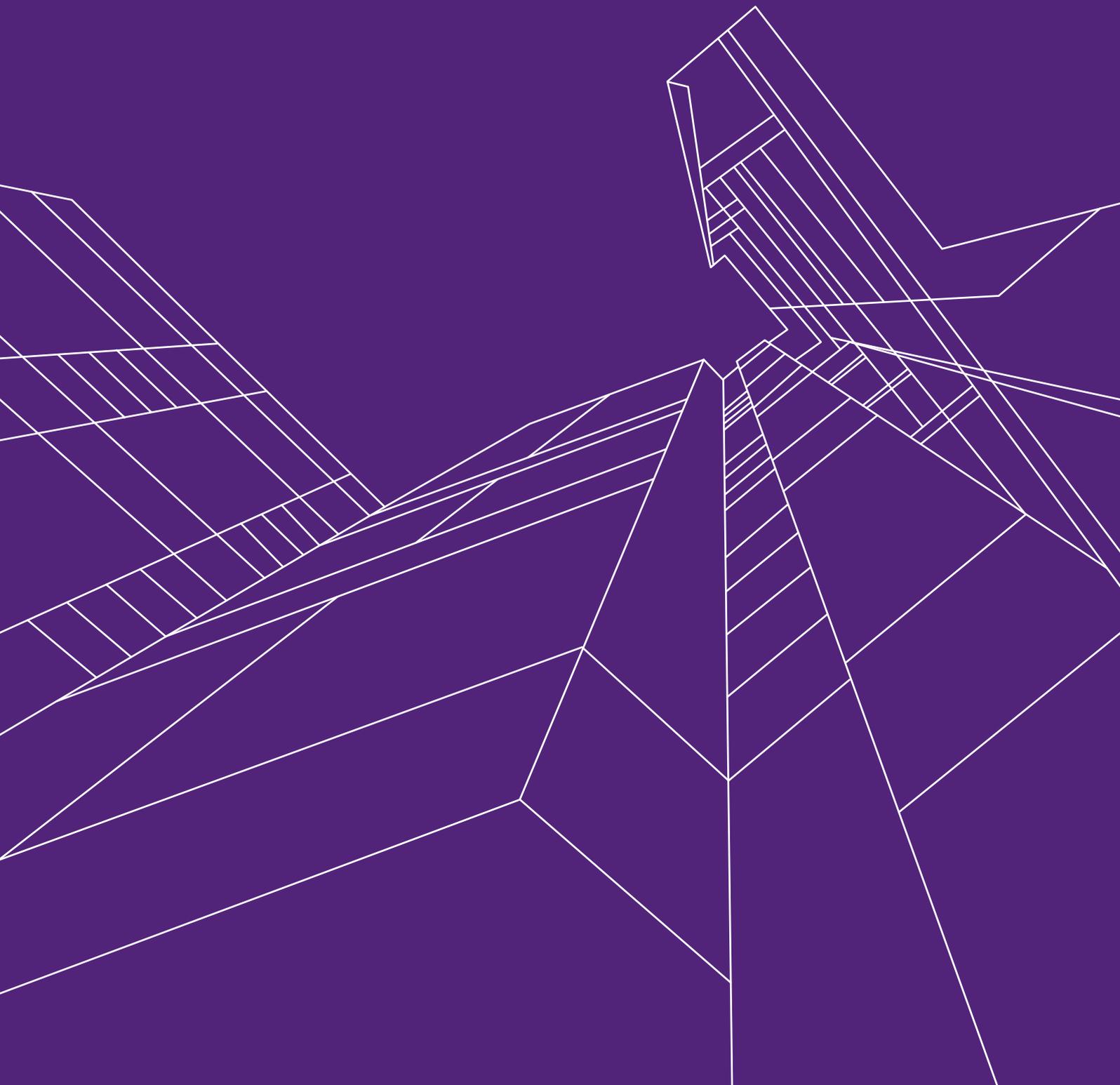
Thank you for joining us in the fight against devastating diseases in the hope of accelerating treatments and better outcomes. Should you wish to make a donation medical research to UQCCR, please contact med.advancement@ug.edu.au





UQCCR

The University of Queensland
Centre for Clinical Research



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