There’s no denying that 2020 has been an extremely challenging year for all of us due to the COVID-19 pandemic, however we have also had many successes to celebrate and be proud of.

The Research and Innovation Portfolio had a rapid response to COVID-19, including business continuity planning and daily huddles with portfolio leaders, Faculty Associate Deans (Research) and Institute Deputy Directors (Research). Portfolio staff were quickly supported to work from home and, as the year progressed, the return to campus was carefully planned to comply with health directives and to support staff wellbeing.

Through 2020 we also increased communications to staff via extra editions of the staff newsletter, featuring initiatives such as a ‘Sustainability-at-home Bingo competition’ and a regular feature interview from a staff member working from home. It was inspiring to see and hear how staff adapted, and even thrived, under these shifting conditions.

In 2020 the Research and Innovation Portfolio has continued to deliver on our five Strategic Imperatives through our culture of collaboration that connects, convenes and catalyses. We have maintained our commitment to engage and inform professional and research staff through virtual quarterly Town Halls and targeted researcher forums, and actively contributed to strategic discussions and initiatives.

Our commitment to deliver through our partnering mindset to enable and support research excellence and impact has not wavered. In 2020 we have continued to work closely with UniQuest, UQ’s primary commercialisation company, to provide expert support to our researchers on their commercialisation and intellectual property journeys. We also rebranded ourselves as the Research and Innovation Portfolio to more fully reflect the breadth of our Portfolio expertise and services. I am pleased that we have been able to recognise efforts of many across the Portfolio in this way, and to also promote the importance of innovation in creating research impact.

The achievements summarised in the following pages showcase the enormous talent, efforts and innovation in the portfolio. I celebrate these 2020 achievements, and I am proud to share them with you.

Professor Bronwyn Harch
Looking forward – 2021

Research at UQ is supported holistically across five strategic imperatives:

- High-quality and impactful research
- Entwined partnerships
- State-of-the-art infrastructure
- Game-changing researcher development
- Facilitating the research enterprise

Our focus for 2021 will be the implementation of strategic initiatives, progressing research alliances, research infrastructure strategic planning, a review of research partnerships functions and capabilities and effective implementation of research systems to empower researchers and optimise the research enterprise.
World-class research and facilities

$452.5m
in research income
(HERDC 2019)

$300m
in research infrastructure

206
fellows of learned academies are UQ staff and professors emeriti

95%
of UQ research is above world standard
ERA (2018)

#3
University in Australia
Nature Index tables (2020)

740
PhDs awarded in 2020
High-quality and impactful research

Despite the challenges presented by the COVID-19 pandemic, UQ had a landmark year in securing research funding and enhancing our systems and procedures to ensure our research reputation remains strong and secure.

Trusted research practice

- New Human Research Ethics Procedure
- Revised Animal Ethics in Teaching and Research Procedure
- New Clinical Trials Procedure nearing finalisation
- Establishment of an International Safeguards Advisory Group to provide advice on development of policy and processes relating to UQ’s obligations in areas such as foreign influence, international sanctions and export controls.

Facilitating the research enterprise

MyResearch Ethics: development of new forms and digitisation of ethics review workflows to streamline processes for researchers and ethics committees. The system will provide many benefits, including increased visibility of application status and reporting capabilities.

Australian Research Council Discovery Indigenous Projects

- **$4.091m**
  - UQ is number one nationally, with the largest number of awards, and the highest total funding

- **$1.776m**
  - UQ was awarded the largest total project value and the highest average project value ($1,363,666)

- **$5.066m**
  - UQ was awarded two five-year projects, and one three-year project

- UQ applied for two Discovery Australian Aboriginal and Torres Strait Islander Awards (DAATSIA) and was awarded both

A total of $30,404,995 has been awarded to Discovery Indigenous Projects over the past five years (2017–2021). Of this, UQ has received $5,066,000 (17 per cent of the funding pool) resulting in the most funding received nationally over 5 years. This is a significant achievement given UQ’s last successful Discovery Indigenous Projects were awarded in 2017.
Australian Research Council National Fellowships

UQ is cumulatively number one for all current ARC fellowship schemes (Laureates, Future Fellowships and Discovery Early Career Researcher Award) across all relevant scheme years (2009–2021), being awarded more than $316M to support the highest quality researchers. In 2020, UQ was delighted to claim third ranking in the ARC Future Fellowship scheme, behind the University of Melbourne and Monash University. UQ’s Faculty of Humanities, Arts and Social Sciences performed particularly well, with Associate Professor Shahar Hamer and Drs Alison Crowther and Erich Round being successful in their Future Fellowship applications.

ARC Linkage Infrastructure, Equipment and Facilities

In 2020 UQ has continued to extend its engagement across Queensland to support coordinated submissions to the upcoming ARC Linkage Infrastructure, Equipment and Facilities (LIEF) scheme. The state-wide coordination is strengthening the quality and number of submissions to the LIEF scheme, to the betterment of the state’s research agenda. Further to this engagement a Development Workshop was held in 2020 for the 2022 round of LIEF, with approximately 100 attendees.

At the end of 2020 UQ was awarded four LIEF Grants awards (a 44.4% success rate and the largest number of awards to UQ since 2017) in the LE 21 round. These awards amounted to over $3.7 M which represents 9.6% of the total funding pool. In addition, four externally-led LE21 bids with UQ partners were also successful.

Enhancing capability and performance in international research funding

Following the establishment in 2018 of a specialist team for international competitive funding in Sponsored Research, a US negotiated rate was successfully agreed with the US Federal Government. As a result, UQ can now claim 47% indirect cost recovery, rather than 10%, on Federal Government Agency applications. Since acceptance early in 2020, UQ has generated a further $500,000 of indirect cost recovery gain on five grant applications that would otherwise not have been possible.

Education and training programs have been undertaken with UQ researchers so that an unprecedented number of UQ-led bids are being prepared for the US National Institutes of Health within the year; an indicator of the growth in confidence of UQ researchers applying into US competitive granting agencies.
**Higher Education Research Data Collection**

Higher Education Research Data Collection assesses the relative performance of providers in research and research training. In 2019, UQ’s total HERDC income increased by 13.2% with the biggest increase in Category 3 Industry and Other Funding for Research 16.3% and Cooperative Research Centre Funding 31.4%.

**Medical Research Future Fund**

UQ secured more than $37M in Medical Research Future Fund (MRFF) funds across a number of schemes announced in January 2020, largely involving clinical trials research. With more than $18 per annum likely to be available through the MRFF, UQ’s success in the 2020 grant rounds positions its researchers well for continuing to grow programmatic research focussing on health and health services translation for impact.

**National Health and Medical Research Council**

Due to the COVID-19 pandemic, the National Health and Medical Research Council (NHMRC) has adjusted its funding schemes to support the research community. While the outcomes for the 2020 funding rounds have not yet been finalised, UQ was delighted to perform well in the NHMRC Ideas Grants round, securing $25M in research funding for 39 research projects. UQ also received an award for an NHMRC Centre of Research Excellence for Associate Professor Coral Gartner’s research in the cessation of smoking. With only 14 awarded each year, the Centres of Research Excellence scheme supports research networks, capacity building and research translation.

**Australian Research Council Linkage Projects**

$12.8m awarded to UQ and 26 given, the highest in Australia

$2.490m ARC funding awarded to UQ for the Linkage Program 20 round

UQ is currently equal second nationally for number of successful applications (5) and third nationally for total ARC funding awarded for the Linkage Project 20 round to date. 2021 funding announcements are made mid-year.

**$37m secured by UQ for Medical Research Future Fund (MRFF)**

**$25m in NHMRC Ideas Grants for 39 research projects**

**$316m for ARC fellowship schemes (2009-2021)**
Positive research partnerships are vital to the success of UQ. Not only do external partners inform our projects with real-world insights about the challenges facing community, industry and government, but research collaborations also provide a platform to test new ideas and approaches that enable UQ researchers to create change.

In 2020, UQ has continued its trend of increasing both the number of partnerships and the breadth of these agreements. Despite the impact of COVID-19, UQ Research Partnerships has seen an increase in research contracts from 3,952 in 2019 to more than 4,200 in 2020. The average dollar value and length of research projects increased across the last four years, indicating a greater complexity of research being undertaken with external partners.

### Entwined partnerships

### IndustryConnect events

IndustryConnect provides a coordinated entry point for external stakeholders wanting to undertake research collaborations with UQ researchers.

In its first full year of operation, IndustryConnect successfully conducted workshops with partners Thales, Stanwell, Infosys, Google and Microsoft. Through these events, UQ Research Partnerships was able to meet known needs, while also identifying other potential areas for collaboration. As a result of these workshops, a Memorandum of Understanding was signed with Infosys and a research agreement with Stanwell.

In 2021, IndustryConnect will expand to include broader engagement opportunities for existing and new partners wanting to learn more about particular areas of UQ research strength.
“By solving current problems and generating new ideas, we are able to make a real difference to society that will propel us into the future.”

Professor Tapan Saha, UQ Industry 4.0 Energy TestLab Leader

UQ-CSL Vaccine research support

UQ was asked by the Coalition for Epidemic Preparedness Innovations to utilise its molecular clamp technology to develop a vaccine in response to the COVID-19 pandemic in just 16 weeks. Through the extraordinary efforts of Professor Paul Young’s research group, this request was met with the development of a vaccine ready for phase 1 clinical trials.

The vaccine development was a truly collaborative venture, with more than 61 research partners involved from development of the vaccine candidate to advanced manufacture. While the Phase 1 trial of the COVID-19 vaccine showed that it elicited a robust response towards the virus and had a strong safety profile, it will not proceed beyond Phase 1 trials as the vaccine interfered with certain HIV tests.

Research Partnerships oversaw the signing of 117 research agreements in collaboration with the Science Faculty and Australian Institute of Bioengineering and Nanotechnology. Support was provided by UQ Legal, UniQuest, Advancement, Governance and Risk, and Insurance.

IBM@UQ Centre of Excellence

Research Partnerships has coordinated a significant multi-year agreement with IBM Australia that will support researchers working across health, manufacturing and environmental sciences by providing access to the latest technology.

As research efforts become increasingly data-rich, the IBM@UQ Centre of Excellence and Innovation will provide researchers with novel data storage and computer hardware platforms to help address the challenges associated with extreme data growth and data organisation.
UQ leads the university sector in translating research outcomes through commercialisation

(2020 Survey of Commercialisation Outcomes from Public Research)

Launch of Industry 4.0 Energy TestLab

The UQ Industry 4.0 Energy TestLab, which will enhance global knowledge on electricity networks and cyber security to protect critical infrastructure, was opened in November 2020.

Bringing together industry, research and education, the UQ TestLab uses the sorts of digital tools that we will all need in the future, including power generation; transmission and distribution; and energy consumption and management.

The UQ TestLab is one of six such labs based in Australian Universities established through the Australian Government’s Industry 4.0 program, with Siemens as a founding partner. UQ Research Partnerships managed the relationships with the Australian Government and Siemens, including the associated Product Lifecycle Management software grant from Siemens.

UniQuest

UQ’s innovative technologies continued to attract significant global interest in 2020:

- Startup company Inflazome Ltd was acquired by multinational pharmaceutical company Roche in September in the largest deal for a spinout company from an Australian university, with an upfront payment of €380M (AU$617M) plus additional development and regulatory milestone payments. Inflazome is developing potential treatments for a broad range of inflammatory diseases, including inflammatory bowel disease and Parkinson’s disease, based on IP developed by UQ researchers in collaboration with Trinity College Dublin.

- Startup company Vaxxas will partner with the US Government to test its high-density microarray patch (HD-MAP) needle-free vaccine delivery technology for pandemic influenza, receiving $30 million from the Biomedical Advanced Research and Development Authority (BARDA).

Streamlining support for researchers

Research Partnerships is currently developing a pipeline of activities to support researchers wanting to engage with industry and business partners through federally-funded initiatives, such as Cooperative Research Centre (CRC) bids.

In 2020, the team held a number of workshops for UQ researchers wanting to learn more about the CRC process and how they can be involved in the future. UQ is involved in 12 of the 24 active Cooperative Research Centres in Australia.

UQ and the Indian Institute of Technology Delhi

The Academy of Research established by UQ and the Indian Institute of Technology Delhi (UQIDAR) has further developed, with the recruitment of Dr Rajeev Shorey as the inaugural Chief Executive Officer.

The appointment has enabled UQIDAR to broaden its industry engagement. In November, UQIDAR organised a workshop with the Google Research Lab in India on artificial intelligence, with researchers now working on proposals for consideration by Google. Renew Power will also undertake research into wind speed forecasting through the Academy.

UQ Research Partnerships was strongly involved in defining and shaping the research focus areas and the thematic impact areas for the UQIDAR program. This exercise was based on the joint strengths of both UQ and IITD, calls for proposals launched in India and Australia, analysis of industry and society needs and national research priorities, particularly in India. This exercise will now enable UQIDAR to better target industry in India and Australia, which will be a primary focus for 2021.
State-of-the-art infrastructure

UQ’s investment in major infrastructure, in partnership with government, industry and donors, provides cutting-edge facilities and leading technologies for researchers. Researchers have access to extensive high-tech research equipment and instrumentation, laboratories and wide-ranging scientific services and training.

Biological Resources

Biological Resources (BR) was able to continue onsite support during COVID-19 restrictions across St Lucia, Herston, Woolloongabba, Gatton and Hidden Vale sites. This specifically included the support of research that necessitated the use of animals, with UQBR staff ensuring the daily care of over 50,000 animals, ranging from zebrafish to cattle.

Centre for Advanced Imaging

All facilities at the Centre for Advanced Imaging (CAI) remained operational for contract research studies and critical research projects during the shutdown period. Imaging involving human participants was suspended for 3-months, recommencing on July 6 following the implementation of a COVID-19 Management Plan developed with the assistance of the UQ CAI Human and Companion Animal Imaging Team, UQ Legal, UQ Health Safety and Wellness, and UQ Insurance.

CAI received $1.2 million from the Australian Cancer Research Foundation (ACRF) to establish an Australian first facility to develop radiometals for cancer therapy. This new facility will focus on alpha therapies, a type of precision medicine, which has the potential to be more effective in killing cancer without damaging healthy tissue.

Centre for Geoanalytical Mass Spectrometry

The Centre for Geoanalytical Mass Spectrometry’s Radiogenic Isotope Facility maintained full operation throughout 2020, attracted external funding of $1M, and an annual analytical revenue of $800,000.

The Environmental Geoscience Lab performed comprehensive and high resolution analyses of metal suites on Moolayember Formation in Surat Basin. The work has informed and improved the reactive transport reservoir model and led to a significant new project to study South Surat metal mobilisation and fate in collaboration with Simon Fraser University, B.C., Canada. In addition, this project has led to enhanced engagements in the provision of external analytical services in both the Centre for Geoanalytical Mass Spectrometry and the Centre for Microscopy and Microanalysis.

Centre for Microscopy and Microanalysis

In the Centre for Microscopy and Microanalysis (CMM) the integration of novel cryo tools, developed and built in house, with the new cryo-Surface-Station-XPS was successfully tested in 2020. The testing and integration was made more difficult due to COVID-19. This project was a finalisation of the Connectivity under UHV and Cryogenic

Central Research Platforms

Aligned along interdisciplinary lines, Central Research Platforms (CRPs) offer core services and world-class capabilities that are integral towards achieving research excellence. UQ’s CRPs house over $125 million worth of high-end equipment and have more than 220 qualified staff on hand to assist researchers to boost their research capabilities. To date more than 10,000 researchers have used these state-of-the-art facilities to advance their research.

Conditions Study between the major surface science infrastructure at UQ and QUT as well as the Cryo-Electron Microscopes at UQ. In 2020 CMM received the first Tims-Tof MS Maldi2 system in Australia, only the second world-wide, in a partnership establishing subcellular cryogenic imaging mass spectrometry which will pave the way for studies of the location of drug and other metabolites in tissue sections.
Genome Innovation Hub

In 2020, The UQ Genome Innovation Hub (GIH) hosted 20 UQ research projects which spanned 7 Institutes, 3 Schools and 8 Research facilities, with more than 70 collaborative researchers. Despite UQ-wide COVID setbacks, GIH supported the preparation of a number of manuscripts, bioinformatic analysis tools and grant applications by UQ researchers; with funding success from the NHMRC, ARC, ASSC and MNDRA. In addition the GIH also supported several seminars, webinars and technical workshops. GIH went live with a new UQ website for researchers and at the end of 2020, it opened its third call for 2021 collaborative project applications.

UQ Genomics

2020 saw the delivery of the first in Australia Sequel II long read capability to UQ in partnership with AGRF. This Sequel II complements the Illumina sequencing platforms at the IMB Sequencing Facility. The facility completed 68 individual projects in 2020. Those projects ranged from Transcriptomics, WGS, amplicon, single cell sequencing and long read sequencing.

Central Glasshouse Services

2020 was an eventful year which saw a number of upgrades to the Facility (including pasteurising trailers, growth cabinets and an electric delivery vehicle), which have enhanced its efficiency as well as its environmental and health and safety profiles. Despite COVID-19 restrictions, a high volume of research was conducted at the Facility with over 5000 2m² plots of plant growth space utilised. The CGS team continued to provide services and assistance to UQ Institutes and Schools and external groups through the delivery of media and consumables, and the provision of support for over 1000 research experiments.

Pinjarra Hills Research Facility

The entire Pinjarra Hills site has been fully operational in 2020. Major infrastructure repair and grazing management has continued with a total of 60 new students, staff and visiting researchers inducted to Pinjarra Hills since March. Despite the effects of COVID-19, animal husbandry has continued with precinct-specific planning in place to ensure projects are COVID-19 safe. All large animal research projects have continued and milestones are on track, with 105 male and female cattle, representing four breeds; 16 standard bred and miniature horses; and 80 mixed breed sheep.

In 2020 work done at Pinjarra Hills has contributed to buffalo flies successfully being transinfected with three strains of Wolbachia shown to have potential use in future area wide biocontrol. Development and testing of an immunocastrate vaccine for cattle successfully demonstrated that vaccination of female cattle against specific purified zona pellicula proteins induces infertility in the majority of cattle for at least 12 months. A Queensland Alliance for Agriculture and Food Innovation-led cattle tick vaccine was also tested, completing a second challenge at Pinjarra Hills farm with a lead vaccine candidate showing promise.

Island Research Stations

Nestled in a seaward corner of Dunwich on Minjerribah (Stradbroke Island), the Morten Bay research station has coped well with COVID-19 operational requirements and continues to provide and enable diverse teaching and research program support; following a five-month shutdown due to COVID-19. MBRS is the base for a remote sensory network program which has recently commenced and will involve setting out several mooring buoys around southern Moreton Bay fitted with real-time data telemetry.

The Heron Island station is the largest and best equipped scientific research station physically located on the Great Barrier Reef. After the completion of minor repair from water damage occurring during the COVID-19 closure, the station is now fully operational and commencing 2021 at near full capacity. Work to install a new seawater intake system has commenced which will provide quality seawater to the research labs, wet decks, tanks and aquaria.

Protein Expression Facility

In 2020 the Protein Expression Facility (PEF) partnered with the Public Health Virology team at Forensic and Scientific Services (FFS), Queensland Health to develop SARS-CoV-2 viral proteins. These synthetic proteins can be used in a blood test to safely screen patient antibodies for prior exposure to COVID-19, and are sufficient for more than 500,000 tests.

Another significant collaboration was with the digital diagnostic company, Ellume, in the fight against the COVID-19 pandemic. Ellume’s rapid COVID-19 diagnostic tests are based on proprietary fluorescent immunoassay and single use biosensor technology. With the delivery of highly pure and functional SARS-CoV-2 recombinant proteins at the outset of the pandemic, PEF was able to accelerate Ellume’s development and verification of their range of COVID-19 diagnostic tests.

Research Computing Centre

Research Computing Centre (RCC) managed infrastructure remained fully operational throughout the COVID-19 closures to support all UQ research, including critical COVID-19 research. RCC-backed technology support meet-ups for UQ researchers went virtual during the COVID-19 lockdown, and remain virtual while many UQ staff and students continue to work from home. This included Hacky Hour weekly sessions in which IT experts help UQ researchers with IT-related research issues, such as coding and data storage; the weekly Microscopy and Image Analysis clinics; and a weekly Virtual HPC User Support (vHPC) meetup specifically to support researchers during the pandemic.
TetraQ

Toxicology and bioanalytical teams successfully completed a rat toxicity study to support the UQ-Coalition for Epidemic Preparedness Innovations (UQ-CEPI) COVID-19 vaccine program over the peak of the lockdown period in April and May. Subsequently a second COVID-19 toxicity study was completed in June-August and an antibody titre method was established to support the COVID-19 vaccine clinical study.

These studies include two pivotal non-clinical GLP safety studies in rats to support the progression of the UQ SARS-CoV-2 Sclamp vaccine into clinical studies and the development and validation of methods for detection and titre of SARS-CoV-2 Sclamp antibodies in rats and humans to support the UQ vaccine program. Approximately 1400 human serum samples from the UQ vaccine clinical study were analysed for SARS-CoV-2 antibody responses.

Sixty-nine new research studies supporting the preclinical and clinical development of new therapies for human health were also initiated in 2020, including 22 toxicology studies and 47 bioanalytical studies.

National Collaborative Research Infrastructure Strategy Facilities

The National Collaborative Research Infrastructure Strategy (NCRIS) builds collaborative research facilities that bring together funding from the Australian Government, Queensland Government, industry, universities and university researchers to help provide open access research infrastructure. UQ is a lead node on several NCRIS facilities, and a collaborator on many other significant NCRIS facilities.

UQ-led NCRIS facilities

Terrestrial Ecosystem Research Network

Terrestrial Ecosystem Research Network (TERN) is Australia’s land ecosystem observatory. In 2020, TERN sensors have operated 24/7, providing ecosystem researchers with unique data from the enormous unintended experiment of reduced pollutants and human impact across the continent resulting from pandemic lock-downs.

TERN’s ecosystem national research infrastructure project has been awarded a three year contract with the Commonwealth Department of Agriculture, Water and Environment to provide standardised ecological monitoring protocols and systems for data collection, storage and management.

National Imaging Facility

The National Imaging Facility (NIF) provides advanced imaging capabilities of humans, animals, plants and materials. Despite the challenges of 2020, NIF attracted almost $28M in co-investment from partner institutions and State Governments and established a number of new imaging infrastructure facilities, including the first Magnetic Particle Imaging facility in Australia.

Partnerships continued to strengthen and grow over the past year. The Queensland NIF node officially expanded to include the Herston Imaging Research Facility (HIRF), bringing QUT, QIMR and Queensland Health into the national network. NIF continued its partnership with ARDC, collaborating on three platform development projects for national federated repository and computing capability. Recognising the importance of FAIR data practices, NIF has an ARDC-funded Training and Community Engagement Manager to promote the collaborative eResearch infrastructure and provide training and advocacy in FAIR data.

Other NCRIS facilities involving UQ

- Astronomy Australia
- AuScope
- Australian Research Data Commons
- Microscopy Australia
- Australian National Fabrication Facility
- Australian Plant Phenomics Facility
- Bioplatforms Australia
- National Computing Infrastructure
- Translating Health Discovery
- Therapeutics Innovation Australia
Game-changing researcher development

Supporting HDR students in response to COVID-19

Supporting the success of UQ’s graduate researchers is at the core of our purpose and depends on collaborations with Faculties/Schools and Institutes, central Portfolios across UQ, and the HDR student community. In 2020 these strong partnerships were invaluable as we met the challenges as a result of COVID-19. The Graduate School led a coordinated, University-wide response that supported HDR students; focused on ensuring they could continue to progress their research, as well as support their health and wellbeing during this challenging period. We worked with students on a variety of options regarding their HDR candidature, and collaborated with Student Services to offer additional sessions centred on dealing with uncertainty and the changed working environment. We also coordinated a particularly successful panel discussion on adjusting research projects affected by COVID-19 held with 5 researchers from across UQ:

“I liked the panel’s examples of how they or their HDR students have been impacted and how they’ve made changes to their research due to COVID-19. I also liked how the panel speakers all had the theme ‘Everyone has been impacted in some way’ e.g. industry, HDR advisors … Thanks for being able to arrange this panel and thank you to the speakers who gave their time to do this “

Following this, the COVID Impact HDR Scholarship extension has been implemented to provide an additional 3 months of scholarship for UQ scholarship recipients to assist in writing up and finishing the thesis if their research was affected by COVID-19. Specialised bootcamp is now offered to support final submission, with very positive feedback. Further programs are scheduled for 2021.

Career Development Framework

As a result of COVID-19 CDF activities we pivoted from a largely face-to-face delivery model to a fully online mode. To support students during this challenging period, the Graduate School launched a series of COVID-19-specials. These ‘specials’ addressed employability and pivoting research projects, but overwhelmingly focussed on protecting mental health and promoting resilience among our HDR cohort.

COVID-19 specials

• Scientific career paths: Put your best foot forward
• Expert Panel: How to adjust your research for COVID-19
• Mental Health First Aid
• R U OK: Student panel lived experience
• Maintaining well-being while working from home
• Keep calm and carry on: Dealing with uncertainty in the COVID-19 era
• Finish that thesis!

The unintended but positive outcome of this move to online delivery has widened our reach and improved accessibility of the Career Development Framework. Attendance increased by nearly 17% in 2020 compared with 2019.

97%
Overall Satisfaction for the CDF

170+
CDF sessions held in 2020

1729
unique HDR candidates attended a CDF workshop as at September 2020

5283
attendances at CDF workshops as at September 2020

100
unique workshop titles in 2020

Industry placements

Higher Degree by Research (HDR) placements adapted quickly to new ways of working as a result of the COVID-19 pandemic. A shift was made to enable remote placements to ensure the numerous HDR candidates who undertook international or interstate placements were not disadvantaged. The Graduate School organised more than 55 placement opportunities with 48 partners in 2020, with a further 15 placements to commence in 2021. Placements were undertaken within government, industry and the not-for-profit sectors and provided HDR candidates with an opportunity to further develop their transferable skills.

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RESEARCH AND INNOVATION YEAR IN REVIEW 2020
3 Minute Thesis
As a result of COVID-19 the 2020 3 Minute Thesis Competition moved to a virtual format. The move to a virtual video submission resulted in a 31.5% increase in participation in UQ’s own competition. The UQ 3MT winner was Emma Schimke from the Faculty of Health and Behavioural Sciences for her presentation titled To sleep or not to sleep?

The Asia-Pacific 3MT competition was also a success in 2020 in its virtual video format. A total of 53 universities were represented, with participants from 8 countries across the region. The winner was Yifei Lou from Nanyang Technological University for her presentation titled Listening in on Plants through a Conductive Liquid Glue. The Asia-Pacific 3MT Competition is proudly supported by Springer Nature and UniBank and the Graduate School values their ongoing support.

Global Change Scholars Program
The Global Change Scholars Program (GCSP) launched as a 1 year Program with new modules in 2020:
• Module 1: The global trends interactive seminar series
• Module 2: Research impact and innovation workshops and group projects
• Module 3: Science communication training

This year, the program selected 25 talented scholars who commenced in July 2020. The scholars hosted a Showcase event in November where the 2019 cohort presented their research to the 2020 cohort via recordings that they had produced as part of the program. Due to COVID-19, the program quickly adapted to a mixed mode approach, making the learning activities available both virtually and in person to accommodate the different needs of the cohort. A measure of the impact of the Global Scholars was the selection of four of these students (out of a total of six HDR students in total) to participate in the Group of Eight taskforce of leading researchers to produce a COVID ‘Road to Recovery’ Report.
Facilitating the Research Enterprise

3600+ active research projects in 2020

1000+ new research projects approved in 2020

1300+ continued critical work on campus during COVID-19 lockdown including staff who
• Cared for live organisms
• Maintained critical physical infrastructure
• Continued COVID-19-related research
• 80 COVID-19-related projects have begun in 2020

UQ Aboriginal and Torres Strait Islander Research and Innovation Strategy
The UQ Aboriginal and Torres Strait Islander Research and Innovation Strategy (2021-2025) was approved in December 2020 and will launch in early 2021. The Strategy sets a framework for UQ to excel as a national and international leader in Aboriginal and Torres Strait Islander research and innovation and to support career progression for Aboriginal and Torres Strait Islander researchers.

The Strategy sets out a vision for UQ to leverage research as a tool of empowerment for Aboriginal and Torres Strait Islander peoples, communities and organisations. This will be achieved through nurturing a respectful and supportive University environment alongside a broad and robust program of research and innovation.

Digital Research Notebooks
Digital research notebooks (DRN) enable UQ researchers to organise, store, curate and share all their projects’ research or laboratory data including working documents, images, observations, and data in any format. During the early procurement planning phase, UQ anticipated there would be an initial take-up of 500 DRN notebooks by the end of implementation, but a stronger than expected take-up has led to a total of 2,012 new DRN notebooks with over 3,291 registered users. The completed Digital Research Notebooks (DRN) service has been successfully integrated into RDM.

The DRN project has realised the following benefits:
• Replacement of traditional hard copy laboratory notebooks with a digital solution that provides efficient storage and retrieval of documentation and reduction of administrative burden.
• Improved collaboration with internal and external researchers through integration with RDM and improved storage and security of research data for all researchers.
• Improved research data governance with date stamping and real-time user changes to enable version control.

MyResearch
Due to go-live in early 2021, the Ethics component of MyResearch will revolutionise the management of ethics applications and approvals for human and animal research at UQ. 2020 also saw significant progress on MyResearch Projects, the second stage of implementation.

HDR Enhancement
Work done in 2019 to move the management of HDR candidature from a paper-based system to a modern online application has continued throughout 2020. Stages two and three of the thesis examination development has undergone extensive user acceptance testing and we are looking forward to deployment in late-2020. The project has established a comprehensive library of Standard Operating Procedures covering the enhancements and these are available to staff via SharePoint.
Research Policy Review

The Research portfolio has commenced a review of Research policies to align with the objectives of the UQ Governance and Management Framework Policy [1.00.01]. Throughout 2020, 24 policies were reviewed and updated, ensuring the UQ research community has access to the most current information covering the areas of Research Administration [4.10], and Research Conduct and Integrity [4.20].

Research Data Manager

Research Data Manager (RDM) provides UQ with an integrated data management system covering the entire research data lifecycle. It offers seamless provisioning of easily accessible, secure, and sharable data storage in real-time, and enables publication of datasets into UQ eSpace. RDM facilitates link publication records and datasets and provide a mechanism for the storage and retrieval of archived data.

In 2020 RDM transitioned to business-as-usual under the leadership of the Pro-Vice-Chancellor (Research Infrastructure) with the establishment of the Research Systems Team.

In 2020, 3,901 researchers used RDM for the first time; 4,703 new records were created; 5,531 terabytes of data was stored in RDM; UQ researchers collaborated with more than 1,200 external collaborators through RDM; and the Library held 35 RDM training sessions.

Research Management Business Transformation

The Research Management Business Transformation (RMBT) Program is progressively transforming the way research support and administration is delivered at UQ to provide an integrated, digital research management capability for researchers, research administrators and management. The RMBT Program and projects are providing enormous benefit to the University in delivering:

- Increased digital workflows and efficiencies supporting the HDR experience and administration of the UQ Graduate School.
- Policies and procedures supporting the research endeavour are up to date with national codes and legislation, consolidated and simplified for practical application and support and embed the outcomes of RMBT projects and other related University initiatives in research practice.

It is acknowledged that while not everything has gone to plan in a year of unprecedented challenges brought about by COVID-19, the careful planning for contingencies and adaptability of projects, together with strong risk monitoring, governance and oversight of the Program by the Steering Committee, has ensured continuity of the progress towards delivery of the program of work.
Staff Development

Research and Innovation continued to provide assistance and support to researchers. With 2020 being a year of tumultuous change due to COVID-19, all workshops needed to pivot quickly to Zoom. By the end of the year training sessions were run across the following themes:

**HDR Advisor, Coordinator and Examiners training:**
- Compulsory HDR Advisor Induction
- Masterclass for HDR Advisors
- Chair of Examiners Training
- Supporting the Welfare of HDR Candidates during Candidature
- Postgraduate Coordinator Forum
- Supervising Aboriginal and Torres Strait Islander HDR candidates
- Contemporary expectations in HDR Supervision
- Respectful supervisory relationships (pilot)

**Grants and Research Funding training:**
- Australian Research Council Projects Information Sessions
- Advance Queensland Information Sessions

**Research Ethics and Integrity training:**
- Research Integrity Online Module
- Human Research Ethics Information Session
- Animal Ethics @ UQ Information Session
- Human Ethics POLSIS
- Human Ethics Information session
- Got Ethics
- Research Integrity at UQ

**Research Management training:**
- Research Performance Reporting
- Essential Knowledge for Research Management

**Researcher Inductions and other Fora:**
- Inaugural UQ Researchers Forum
- Academic Orientation (led by HR with R&I input)
- New Staff Expo (led by HR with R&I input)

Town Hall Meetings

This year we held Town Hall Forums in July, October and December all via Zoom which provided a great opportunity for all staff within the portfolio to hear updates on the strategic imperatives. In October we were lucky to hear directly from vice-chancellor Professor Deborah Terry, AO and we are working on a variety of speakers both internal and external for next year’s events.

Wellness

2020 saw an increased focus on promoting positive mental health initiatives across the portfolio – including rolling out a program of Mental Health First Aid Training offerings, RU OK? Day events, mandatory training compliance improvements, increased Ally Network representation, fundraising for Movember and representation on Green Office and new sustainability initiatives.

Staff Awards

2020 Research and Innovation awards went virtual in 2020. We received 176 nominations and congratulated over 80 staff across nine categories.
Research Impact Highlights

ENVIRONMENT
Mysterious ‘quantum dots’ to revolutionise solar energy

CULTURE
Navigating Indigenous native title claims with research

SOCIETY
Tackling disadvantaged children’s education post-COVID-19

ECONOMY
Landmark deal for Inflazome Ltd start-up from UQ-Trinity College Dublin IP
Research Impact

Research Impact continues to be an important strategic focus for UQ. In 2020 Research Strategy, Planning and Performance established the Research Impact community of Practice and held an inaugural Research Impact Showcase. The Global Change Institute’s Impact Nexus was also piloted.

Research Impact Showcase

An inaugural Research Impact Showcase was held in 2020 to accelerate the research impact conversation at UQ. The showcase focussed on the importance of research impact and keynote speakers highlighted different ways in which research impact is relevant to the UQ research community. The showcase was attended by 217 UQ staff, who heard keynotes from:

- Professor Bronwyn Harch, Deputy Vice-Chancellor (Research and Innovation) on Approaches to Maximise Research Impact
- Professor Bronwyn Fredericks, Pro-Vice-Chancellor (Indigenous Engagement) on Indigenous-led research to impact
- Ms Helen Morgan, Deputy Director, Research Strategy, Planning and Performance, on Institutional impact and reporting
- Professor Rachel Parker, Director of UQ’s Global Change Institute, on the Role of GCI and transdisciplinary research

Impact Tracker

The measurement of research engagement and impact is growing in significance globally, with a focus on tangible benefits to non-academic end-users and best return on research investment. As a result, research organisations need to help academics embed impact at each stage of the research process and deliver a system allowing researchers to understand and track impact along the research pathway. Impact Tracker is a unique platform for researchers to plan, capture and report on the impact and engagement of their research. The use of Impact Tracker has increased dramatically in 2020 and funding has been approved for the integration of Impact Tracker with UQ RDM to streamline project creation and significantly increase user adoption.

Research Impact Community of Practice

Established in 2020 and with 43 active members, the Research Impact Community of Practice boasts a diverse membership including Pro-Vice-Chancellors, Directors, Faculty Research Managers, and Associate Directors of Research along with representation from all areas of the Research and Innovation portfolio, all Faculties and Institutes, the UQ Library, Global Engagement, Marketing and Communications and UniQuest. The Community of Practice held 2 meetings in 2020 with the first introductory meeting involving an analysis of research impact at UQ and the second meeting focussed on current and potential research impact training and information available to UQ staff. The Community of Practice is also accompanied by a Research Impact Teams group, with over 300 members from across UQ.
Global Change Institute reinvigoration and transdisciplinary research

In 2020, the Global Change Institute (GCI) launched the core elements of its operational model under the leadership of its new Director, Professor Rachel Parker, ensuring progress towards delivering GCI’s mission to build funded transdisciplinary partnerships that impact on society’s complex and enduring challenges.

Innovation Brokers have been appointed to negotiate research opportunities and ensure GCI has the capacity to support major research initiatives that deliver impact across UQ’s five research impact themes.

The Global Change Research Network (GCRN) Program was launched and received 27 applications from UQ Faculties and Institutes. The program supports researchers and partners to address challenges which require input from multiple disciplines and end-users across government, industry and the community.

GCRNs will address societal challenges, harnessing UQ research excellence and engaging end-users and stakeholders to pursue major research funding opportunities to deliver impact. Four GCRNs were awarded and a further 7 have been identified as ‘pipeline GCRNs’.

The Research Impact Nexus (RIN) is a further core element of GCI’s operational model. RIN will support researchers and partners to unpack the research components of societal challenges through Future Forums involving Q&A Panels of researchers and partners. Research co-design facilitation will enable researchers from a wide range of disciplines to collaborate with their external partners to design research programs and research impact pathways.

GCI is now positioned to deliver on its goal of making it easier for UQ researchers and partners to collaborate to solve societal challenges and deliver maximum value from UQs research excellence.

“Our value to society is realised when our researchers collaborate to solve global challenges”

Rachel Parker, Director GCI
Research and Innovation Portfolio

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