

1st Edition

UQPMS Research Guide



ACKNOWLEDGEMENTS

UQPMS would like to acknowledge the following students for their essential contributions to the 2024 UQPMS Research Guide.

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Special thanks is also extended to particular UQPMS Executives members for their invaluable advice, oversight and guidance throughout the developmental process of this guide.

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INTRODUCTION

Welcome to the UQPMS 2024 Inaugural Research Guide!

This was developed by a keen group of students who have reached out to doctors, researchers, previous students and more to collate all the information you will need to begin your journey into the fascinating world of medical research.

The guide has documented what research is, why it is necessary to undertake for incoming and prospective doctors, where you can take part in it, how to become part of a project and some FAQs to round it off.

That being said, let's dive into the nitty-gritty of research!

WHAT

I'm sure many of us have heard the words:

"You need research to specialise!"

"It is important to get into research!"

However, aimlessly involving yourself with research only guarantees a subpar experience with little to show for it in the end.

This section will explain the fundamentals of research, who partakes in it, the different types of projects and what your role as a student might look like. More importantly, we also discuss its implications to everyday society and what this opportunity means beyond yourselves.

WHAT

Holistically, research aims to **improve** people's health and well-being through rigorous trials or studies. Aims can vary from determining whether a drug is safe for public use, analyzing if there is a genetic component to disease prevalence, or anything else your mind thinks is worth exploring.

The majority of research is completed in laboratories (**wet**) or even in more typical office settings (**dry**).

Wet labs involve biological matter, drugs or chemicals while **dry labs** have a more computational approach involving modeling and analyzing data. Think of the difference between investigating the biological effects of a vaccine versus exploring the effectiveness of a new teaching method—big difference right? This could help inform the type of research you would like to apply for!

Another type of research project could be **clinical trials** which explore how different treatments affect patients in fields like pharmacy, immunology etc. Notice how closely related these are to our very own university courses (neuro, physio, anatomy, pharm)?

One last type of research is **literature reviews**, which some of us may be familiar with from school research investigations. They involve researchers investigating previously published research and drawing wider conclusions for that specific topic.

However, have you ever had that nagging thought in the back of your head saying:

“Is medicine really the right career for me?”

Research is a great way for you to dip your toe in the field as you will:

- (1) potentially meet doctors along the way
- (2) see if science is your passion and
- (3) determine if research could be an alternate career pathway

Let's explore the hierarchy or positions that exist within a research team!

As a student, you will most likely be a volunteer or an assistant. However, many other roles exist – group leader/head researcher, PhD students, Honors students, research assistants, lab managers and of course, **VOLUNTEERS**.

As an undergraduate student, your role will more likely involve grunt work like repetitive statistical analysis as opposed to reaching out to subjects. However, if you show initiative, researchers will be more eager to keep having you as a volunteer or even offer a paid role!

This way, you are exposed to new skills (observing surgery, laboratory techniques etc.), create further connections and form working relationships with doctors and scientists.

Volunteers can also have different roles depending on the type of research. You could be collecting data for clinical trials, analysing data in a dry lab, or reading histology slides in a wet lab! Talking to people with research experience and potential supervisors is the best way to understand your roles and responsibilities.

If you are lucky to be accepted into a research project, it may be wise to do a little reading up beforehand so you are not thrown in the deep end.

HOT TIP!

- ◆ Google any previous papers the group you will be involved has published
- ◆ Learn the general “lingo” relating to the research you will be involved in
- ◆ See our FAQ section if you want some help analysing papers or literature reviews



WHY

After 'What?', the most common thing people ask is 'Why?'

The answer to this is multifaceted and ranges from simply an interest in the field to a number of practical reasons.

So, let's dive into it!

WHY?

For a General Interest...

First, we can start at perhaps the most basic answer: **it's interesting!**

Participating in research is a **unique** and **fascinating** experience – probably unlike anything you've experienced before. It provides you with the opportunity to learn new techniques and **actively** contribute to the advancement of scientific knowledge with your own two hands! Additionally, for those who have a specific interest in the **medical** field, research can be a great way to further your knowledge about future career paths and much more! More than that, for those still uncertain about their career, research is a great way to find out if medicine is your true calling – something some of our very own UQPMS committee have figured out for themselves!

For Your Career....

More pragmatically speaking, research also provides numerous **tangible** benefits to your own career. This section will split things up into different categories and elaborate on each one.

Note: given the premise of this society, this text will take a specific interest towards the benefits of research in service of persuing a career in medicine

To boost your application

Given the rising popularity and competitiveness of the health field, it is not uncommon for applicants applying to different programs and placements to ask “what makes me stand out?” Our response to this is: **research!**

For those still looking for entry into a degree, this added experience will be beneficial if the selection process values your **CV** or **interview**. Research provides experiences which help shape your teamwork, diligence, and proactiveness—something vital to demonstrate in interviews.

SIDE NOTE!

Medicine is a long, hard road and is notoriously difficult to get into. For anyone in this scenario right now, don't give up hope and have faith in your abilities! We believe in you!

Additionally, for those who might have already made it into their respective health degree (**congrats!**), research is still extremely helpful to give yourself a bit of a boost.

Looking far into the future, it should be noted for those potentially applying to more competitive specialties or placements (especially within medicine) that strong research experience has become the **norm**. The research you do now in undergrad will **likely not** directly impact your application. However, the experience and connections you gain can propel and inform future, more impactful projects.

To develop skills in research

“Participated in a research project” definitely looks good on a resume but it’s the skills you develop during your time that truly be beneficial!

Firstly, and perhaps the most obvious, is that you will gain a **plethora** of new skills and abilities. Whether it is learning how to use a new piece of software or how to properly perform a lab technique, you are bound to pick up on many things along the way. These will be particularly helpful if you are participating in a career-relevant research project, but it still can be helpful to gain these extra bits of knowledge.

Outside of research-specific skills, there are many **soft skills** research helps build. Above, we touched on the benefits research has specifically on your application and interviews. In research, it’s common for difficult scenarios to arise, forcing you to develop skills like problem-solving, teamwork, self-accountability and many more.

To make connections

Lastly, if you’ve read the above sections, and decided that all of this seems a bit too early, we urge you to think about the last “why” of research – **making connections!**

A good recommendation here or someone willing to vouch for you there can **improve** your chances of being involved in **future research projects**. Having these connections can also mean that you become acquainted with opportunities that aren’t necessarily advertised extensively. It might look like being introduced to a new researcher looking to add more members to their team or working on a novel project your own supervisor might be interested in.

Lastly, stepping away from the politics of things, research is also another great way to **make friends!** Although a little unorthodox, there is nothing like learning new skills, honing your laboratory techniques, or slaving away over a research project to bond with your fellow researcher!

In conclusion, research can be extremely **rewarding** and has many benefits, regardless of what stage you are at. So, if we’ve convinced you, we’re here to help! Our research guide is curated to help guide you through this new world of research so read on if you’re curious to find out where to begin!



WHERE

With so many options for your research journey, it's hard to find a place to start. Thankfully, we've got your back: here's a few opportunities you may find useful to kick-start your search!

This section will include an overview of how to decide where you want to complete your research (both **internally** at UQ, or **externally** at other research facilities) and what you might need to prepare in advance :)

INTERNAL

UQ Summer & Winter Research Programs

The UQ Summer and Winter Research Programs allow you to work with various **UQ-based researchers & academics** for a short period! This is uniquely helpful as you are **guided** by a highly-regarded researcher through **key research skills**, whilst **being paid** (\$2000 for winter, \$3000 for summer).

The summer period takes place for 6 weeks from November to February, and the winter period is for 4 weeks from June to July. Depending on the degree you are enrolled in, the interests you have and the School your degree is part of, the **number and range of research topics will vary**. For example, there are limited topics for the School of Health and Rehabilitation Sciences, but lots of topics for the School of Biomedical Sciences, so keep this in mind when applying for these projects!

*Email the researchers leading the projects **before** applying!*

Although it isn't compulsory for all research projects, it is advised you organise a time to meet the researchers you may be interested in working with anyway! This allows you to better understand the **research techniques** they use & will be teaching you, the **lab environment** and **their expectations of you**. It will also allow you to gain a **supporting statement** from the research supervisor, which you will use in your application!

CV & Resume

Refer to the **HOW** section of this guide to learn how to write them!

Personal Statement

This is a short paragraph demonstrating your **personal interest in the research project**, your **goals** during your time in their lab, and **why you chose a particular research project**. Make it **specific** to the project that you are applying to, especially if you are applying for multiple!

Academic Transcript

Most of the time, you do not need an **Official Academic Transcript**. However, it is smart to have an **unofficial studies report** (which you can get by going into mySI-net > enrolments) handy, which some researchers may require.

WHAT TO
PREPARE!

INTERNAL

UQ Research-Centred Courses

There are **two** types of research-related courses at UQ: **research skills** and **research project** courses. 'Research skills' courses have modules which take you through **essential techniques** such as data recording, analysis and interpretation, standard laboratory practices, and clear communication of findings. However, 'research project' courses allow you to complete an **individually-organised report**, which contributes to credits towards your degree! These courses are especially helpful alternatives for people who may not have the time to pursue external opportunities, who want to practise and learn core research skills before branching out to different institutes, or for those who want to kill two birds with one stone!

Research Skills Courses

BIOL2006 – Biostatistics and Experimental Design

BIOL2006 focuses on developing skills in **data analysis** and **experimental design** for various **biology-related topics**. This course is useful for people who already do a biology-related degree, or are interested in biology-related research opportunities externally!

SCIE3220/SCIE3221 – Biomedical Science Research Skills **BIOMEDICAL SCIENCE STUDENTS ONLY**

SCIE3220/SCIE3221 focuses on **practical and analytical skills** related to undergraduate biomedical research specifically, which includes unique communication, data collection, and practical skills. Further, the course requires you to **complete a research project** to apply the course content. This is useful for biomedical science students who want to have a good mixture of theoretical and practical learning in their course. Note that SCIE3220 and SCIE3221 are functionally the same. If you enjoy your SCIE3220 project, you can embark on another one with SCIE3221!

BIOM2222 – Advanced Techniques in Biomedical Science

Bachelor of Advanced Science (BAdvSc) Program Only

(those outside of BAdvSc are invited to participate if they achieve >6 in BIOL1020+BIOL1040)

BIOM2222 is an extremely laboratory-based course, and is a helpful 'taster' to the autonomy you need to work in a real lab! Modules involve lab note-taking, experimental techniques and lots of hands-on practicals. Many of the practicals encourage you to independently put your lab skills into practice, which is beneficial in teaching you some practical skills while getting course credits :)

INTERNAL

Research Project Courses

'Research Project' courses allow you to **decide on, organise, complete and present a research project** of your choice for course credits. While these courses require some prior organisation, they are extremely beneficial in getting **hands-on research** experience while contributing to your degree!

WHAT TO PREPARE!

Finding a topic of interest & a research supervisor

You can choose almost anything, so long as it **fits within the guidelines** of your course, and you can **find a research supervisor** to supervise your progress. Typically, your research supervisor will be a UQ researcher: you can find lists of such researchers through searching by **school or faculty**, by **institute** or by **fields of research**. After you have short-listed some potential supervisors, **email them** (refer to the **HOW** section for guidance)! *Click on the underlined subtitle of this section to access the researcher data base.*

Special topics submission forms

Some research projects require a permission form to confirm your research topic and your enrolment in the course. Ensure you **check the form due date** before you enrol in your course, and **check which form you need to submit!**

Here is a list of possible 'research project' courses that undergraduate students can take. Keep in mind that some of these courses are **specific to only ONE degree or faculty**, so make sure the course credits will actually count for your degree before you enrol!



INTERNAL

UQ Schools

UQ is divided into various different 'schools' which each course and degree goes under (e.g. School of Biomedical Sciences (SBMS)), and each of these schools have their **own dedicated researchers** and **research groups**! By looking at the research groups under the school you are interested in, the research topics will be both **relevant to your area of interest**, and **easy to contact through UQ**.

If you want to explore a **wide range of topics** related to a general field or school, or want your research experience to **remain largely internal to UQ**, this is a helpful alternative for you :)

Here are a list of some key schools that may be helpful or interesting for biomedical science students, a selection of research groups, and some current research projects or publications from these research groups!

Faculty of Health & Behavioural Sciences

School of Dentistry

Group for Anodized Therapies for Osseointegration, Regeneration and Stimulation (GATORS)

*Nano-engineered dental abutments towards soft-tissue integration
Dual micro-nano implants for osseointegration and antibacterial functions*

Immunoengineering for Regenerative Dentistry

Epigenetic Nanodiagnosics and Therapeutics Group

*Aerosol composition in dental clinics
Nano-diagnostics for periodontal disease*

UQ Oral Microbiomics for Learning and Application

Biomanufacturing and regenerative dentistry

*Vertical bone augmentation
Soft tissue regeneration
Periodontal regeneration
Tendon and ligament*

The Ivanovski Tissue Engineering and Additive Manufacturing (iTEAM)

Clinical Research Units

Clinical research study to evaluate the effect on gingival inflammation of a toothpaste containing vitamin D in patients with established dental plaque and gingivitis.

Analysis of intrabony defects treated with minimally-invasive non-surgical therapy: a prospective cohort multicentre study.

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✦ Peters' Regenerative Opportunities in COR3 (PROCOR3)

Non-traditional approaches to determine the condition of the pulp dentine complex

Development and application of a 3D inflamed dental pulp in vitro model for the evaluation of vital pulp therapy biomaterials

✦ School of Health & Rehabilitation Sciences

✦ Communication

The efficacy of telerehabilitation compared with centre-based community rehabilitation on time spent physically active in people with stroke: a pilot randomised controlled trial ('Digital Health' group within Centre for Hearing Research)

Bridging the Digital Divide: Building Health Self-Efficacy through Communication-Accessible Online Environments (Queensland Aphasia Research Centre)

✦ Paediatrics: Healthy Start to Life

Child and Adolescent Neuromotor Control Research (#CAN_Research) (Tucker Group - Motor control and pain research)

Feasibility and cost-effectiveness of establishing a Hearing Screening Teleaudiology Program for preschool children in Dalby, Queensland (Hearing Research Unit for Children)

✦ Musculoskeletal: Movement in Health

Translating low back pain research: Identifying potential harms in health messaging

Efficacy of a personalised pelvic floor Muscle Training program on Urinary incontinence after radical Prostatectomy (MaTchUP)

✦ Neurorehabilitation and Ageing

Optimizing cognitive performance by mimicking slow-wave sleep in the awake brain

A physiotherapy exercise program with a self-management approach to improve physical activity in people with mild-moderate Parkinson's disease: A RCT

✦ Professional education

Improving access to the hearing services program for people from culturally and linguistically diverse backgrounds

Understanding how speech pathology students become person- and family-centred practitioners

✦ Digital health

The efficacy of telerehabilitation compared with centre-based community rehabilitation on time spent physically active in people with stroke: a pilot randomized controlled trial

Implementing the Tailored Activity Program for people with dementia and their family living at home: i-TAP (Australia)

✦ Knowledge translation and impact

Co-design of an occupation-based Virtual Reality intervention for people with cognitive impairment after brain injury

Validation of a diagnostic support tool for early recognition of cervical arterial dissection in people with acute neck pain and headache

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✦ School of Human Movement & Nutrition Sciences

✦ **Biomechanics, Motor Control and Sports Medicine**

Structural and neural determinants of stress and strain in human muscle

A new perspective on how we learn motor skills: two adaptation classes?

✦ **Pedagogy, Sociocultural Studies and Sport History**

The digitisation of school health and physical education

✦ **Nutrition & Dietetics**

Contemporary management of malnutrition in patients with chronic obstructive pulmonary disease (COPD)

Nutritious Tools: Open access education and digital repository for early childhood nutrition

✦ **Physical Activity and Health**

Implementation and scale-up of a consumer co-designed physical activity promotion program for people with moderate-to-profound disabilities

Small Steps for Big Changes: Implementing an Evidence-Based Diabetes Prevention Program into Diverse Urban Communities

✦ **Exercise Physiology**

Effect of high intensity interval training (HIIT) on human gut microbiome functional diversity, inflammation and body composition in colorectal cancer survivors

Peer support in maintaining physical activity and health following an exercise training intervention for cancer survivors: a randomised controlled trial

✦ **Para Sport and Adapted Physical Activity**

Does a high-volume, performance- focused swimming program elicit meaningful, therapeutic change in people with cerebral palsy? A proof- of-concept study

✦ School of Nursing, Midwifery & Social Work

✦ **Women's Wellness after Cancer Program**

ACUMEN - Enhancing treatment outcomes after gynaecological cancer

Emerald - Younger Women's Wellness after Cancer Feasibility Study

✦ **Addressing Disadvantage Amongst Older People**

The life course of older people in precarious housing

A theoretical framework for elder abuse to guide social work practice

✦ **Transforming Child Protection and Justice Systems**

Insights from people with lived experience of disability and the justice system

✦ **Infection Prevention and Vascular Access**

Difficult Access Requires Thought, Training and Technology (DART3) - Co-developing an ultrasound pathway for patients with difficult intravenous access.

INTERNAL

◆ Paediatric Nursing and Patient Safety

Preventing adverse events during paediatric cancer treatment: A multi-site hybrid randomised controlled trial of innovative catheter lock solutions.

◆ School of Psychology

◆ Ageing Mind Initiative

◆ Applied Social Psychology Lab

Overcoming the Impact of Anxiety for Would-Be Donors

Stress & Groups (coping responses to stress in workplace environments)

◆ Attention and Control Laboratory

Individual differences in decision strategy relate to neurochemical excitability and cortical thickness

Neurochemical predictors of generalised learning induced by brain stimulation and training

◆ Live Lived Well Research Group

Implementing routine outcome measures and client feedback in the AOD sector to increase its capacity to deliver evidence-based and cost-effective care.

OurFutures Vaping: a cluster randomised controlled trial of a school-based eHealth intervention to prevent e-cigarette use among adolescents

◆ Perception Laboratory

Research area: What factors determine whether or not we become aware of sensory processing?

Research area: Sensory analyses are often independent of one another, can take place in different brain regions and be completed at different rates. How do they combine across space and time to create subjectively unified experiences?

◆ School of Pharmacy

◆ Biomedical Discovery and Development

Design, synthesis and evaluation of novel molecules for the treatment of Alzheimer's disease

Computer-aided design, synthesis and evaluation of new drugs for cancer, pain and neurodegenerative diseases

◆ Biotherapeutic Delivery and Diagnostic Solutions

Discovery of new drugs from indigenous Australian plants using supercritical fluids

Inorganic nanoparticles for targeting bacterial biofilms

◆ Clinical Pharmacy and Pharmacometrics

Developing pharmacokinetic models for immunosuppressants in solid organ transplant patients

Implementing Pharmacogenomics into Community Pharmacy Practice to Personalise the Treatment of Depression

INTERNAL

Faculty of Medicine

School of Biomedical Sciences

Anderson (endocrinology and metabolism)

Effect of a high crude protein content diet during energy restriction and re-alimentation on animal performance, skeletal growth and metabolism of bone tissue in two genotypes of cattle

Measures of insulin sensitivity, leptin, and adiponectin concentrations in cats in diabetic remission compared to healthy control cats

Bellingham (neurobiology of motor behaviour)

Studies of ion currents controlling rhythm generation and computer models of single neurones and rhythmic networks

Pathogenesis and treatment of motor neuron disease in animal models

Biomedical Education Research Group

Theories of Blended Learning: A Novel Approach to Tertiary Neuroanatomy

How do students deal with difficult physiological knowledge?

Borges (epilepsy and brain metabolism)

Intermittent fasting and susceptibility to seizures

New approaches to improve glucose metabolism in epilepsy

Bowles (developmental reproductive biology)

Sex specific development of fetal germ cells

Germline stem cells

Chen (endocrinology and metabolism)

The modulatory role of growth hormone in inflammation and macrophage activation

Neuroendocrine and metabolic regulation of plasma growth hormone secretory profiles

Centre for Integrated Preclinical Drug Development

Pathophysiology of neuropathic pain and chronic inflammatory pain

MS-associated central neuropathic pain

Clark (peptide chemical biology)

The design and development of peptides to modulate iron homeostasis

Discovery, synthesis and characterization of novel antimicrobial peptides from insects

Coakley (cellular mechanisms of neuroprotection)

Maintenance of axonal integrity

INTERNAL

◆ Coulson (neurotrophins in Alzheimer's Disease)

Studying basal forebrain function in Alzheimer's disease and sleep apnea

Developing optimised peptides for treating neurotrophic dysfunction in neurodegenerative disease

◆ Cuffe (placental endocrinology)

Understanding how metformin treatment for Gestational Diabetes mellitus affects placental function

Using animal models of hypothyroidism and subclinical hypothyroidism to investigate how these common pregnancy disorders contribute to pregnancy complications

◆ Dick (neuromuscular biomechanics)

Improving MObility Via Exoskeletons in people living with Motor Neurone Disease (MND) [iMOVE-MND]

Exploring the influence of passive ankle exoskeletons on the neuromechanics of balance in younger and older adults

◆ Fenlon (cortical development, plasticity and evolution)

Understanding how the early birth of marsupials affects their brain development, and how we can learn from them to help premature babies

Probing the effects of premature birth and oxygen on the developing brain, including neurodevelopmental disorders such as autism and schizophrenia

◆ Furness (laboratory of receptor transducer coupling)

The complexity of receptor signalling in the control of appetite

The influence of the Ghrelin Receptor on the molecular pharmacology and G protein selectivity of the Dopamine D2 receptor (available student project)

◆ Kaminskas (targeted drug delivery)

Understanding the mechanisms by which inhaled nanoparticles are cleared from the lungs

Interindividual variability in macromolecule pharmacokinetics

◆ Key (neurophilosophy)

Foundations of Human and Animal Sensory Awareness: Descartes and Willis

*What if worms were sentient? Insights into subjective experience from the *Caenorhabditis elegans* connectome*

◆ Launikonis (muscle research)

Tiny changes in cytoplasmic $[Ca^{2+}]$ cause large changes in mitochondrial Ca^{2+} : what are the triggers and functional implications?

Effects of inflammation due to COVID-19 infection on cardiac and skeletal muscle (available PhD project)

◆ Lee (neuroimmunomics)

Research area: neuroimmunology in neurodegenerative diseases

Research area: immunometabolism in neuroinflammation

Research area: immune system – stress response crosstalk

Research area: immunosenescence and neurological aging

INTERNAL

◆ Midwinter (applied clinical anatomy)

Research area: haemorrhagic shock and traumatic injury

Research area: frailty development

◆ Moritz (developmental programming in disease)

Periconceptional alcohol exposure: Programming long-term health in offspring

Effect of prenatal insults on the developing placenta

◆ Ng (kinase biology)

Reveal how centrosome signalling controls cell fate

Discover how MAPKs (mitogen-activated protein kinases) regulate microtubules through tubulin-binding proteins

◆ Noakes (neuromotor control)

Research areas: Motor Neuron Disease (MND), Neuromuscular disorders and inflammation, Neuromuscular connections

◆ Padmanabhan (molecular and systems medicine)

Research area: SARS-CoV2, Zika and other related viral infections

Research area: Quantitative Systems Pharmacology

◆ Pagan (targeted protein degradation)

Mitochondrial function is a critical determinant of cell viability (exploring the role of the ubiquitin proteasome system in regulating mitochondrial quality control pathways)

Centrosomes are important organelles that play roles in cell signaling, microtubule-dependent trafficking and chromosome segregation – exploring the regulation of centrosome function by the ubiquitin proteasome system

◆ Piper (neural stem cells in development and disease)

Understanding the drivers of neural stem cell differentiation

Identifying how abnormal neural stem cell biology contributes to disease

◆ Rajapakse (cardiorenal research)

Development of novel treatment approaches for cardiorenal syndrome

The role of the microbiome in cardiorenal syndrome

Exploring factors that influence nitric oxide production: Role of the L-arginine transporters

◆ Rash (ion channel pharmacology)

Spider venom peptides as tools to study acid-sensing ion channels, potential drug targets in neurological disease.

Ligand-gated ion channels in neurogenic inflammation – the interface between neurons and inflammatory cells.

INTERNAL

◆ **Rawashdeh (chronobiology and sleep)**

Coupling the circadian clock to homeostasis: the role of Period in timing physiology

Early postnatal development of the visual cortex in mice with retinal degeneration

◆ **Reichelt (cardiac disease and therapy)**

Understanding how growth factors regulate neonatal cardiac structure and function

Understanding how an old heart gets stiff

◆ **Rosengren (peptide structural biology)**

Structural diversity and functional roles of novel cyclic plant peptides hiding in albumin genes

Improving blood-brain-barrier penetration and in vivo stability of relaxin-3 antagonists for the treatment of neurological disorders

◆ **Ruitenberg (neurotrauma)**

How does high-dose intravenous immunoglobulin (IVIg) therapy improve recovery from spinal cord injury?

Induced pluripotent stem cell (iPSC)-based strategies for spinal cord repair

◆ **Simmons (placental biology)**

The role of histone variants and chromatin remodelling in preparing the endometrium for embryo implantation and early placental development

Investigating an unusual placental cell-type - sinusoidal trophoblast giant cells

◆ **Stephan (The Laboratory for Human Craniofacial & Skeletal Identification (HuCS-ID Lab))**

The Critical Photographic Variables Contributing to Skull-Face Superimposition Methods to Assist Forensic Identification of Skeletons: A Review

Infracranial radiographic comparison for human identification: a study of image quality and tissue shielding effects

◆ **Steyn (Heterogeneity in neurodegenerative disease)**

The Metabolic Exploration in Neurodegenerative Disease (MEND-MND) program

The Biomarkers in slow progressing and LONG surviving forms of MND (B-Long) program

◆ **Suarez (brain evolution & development)**

Timing in brain evolution and development

Roles of early neural activity in circuit formation

◆ **Teasdale (protein trafficking in disease)**

Retromer – A master regulator of endosome protein trafficking

Retromer's role in neurodegeneration

◆ **Thomas (receptor biology)**

INTERNAL

◆ Thor (control of cell fate and proliferation in the developing brain)

What drives the anterior expansion of the mammalian central nervous system?

Decoding cell specification in the developing mammalian hypothalamus

◆ Tucker (motor control and pain research)

Investigate the differences in muscle control strategies in runners with and without patellofemoral pain (knee cap pain)

The role of back muscles in adolescent idiopathic scoliosis

◆ Vukovic (neuroimmunology and cognition)

Role of microglia in regulating behavioural outcomes following brain injury

◆ Walton (reproductive growth factors)

Targeting TGF- β proteins to control animal reproduction

Understanding the physiological consequences of loss of inhibin function in females

◆ Woodruff (neuroinflammation)

Therapeutic potential of targeting innate immune molecules in neurodegenerative disease

Clinical studies to validate innate immune targets in neurological disease

◆ Wu (cancer therapeutics)

Harnessing the immune system to battle ovarian and breast cancers

Understanding the role of exosomes in cancer progression

◆ School of Public Health

◆ Australian Women and Girls' Health Research Centre (Epidemiology, Methodology, Policy)

Mothers and Their Children's Healthcare Experiences Study (MaTCHES)

Genetic variants, Early Life exposures, and Longitudinal Endometriosis symptoms Study (GELLES)

◆ NHMRC Centre of Research Excellence on Achieving the Tobacco Endgame

What are the best options for regulating the content and design of tobacco products in Australia and for disclosing their contents and emissions?

Communication strategies to explain new tobacco control policies to a broad range of stakeholders.

◆ Mental Health Policy and Epidemiology

◆ Research that supports positive outcomes for Australia's First Nations people

Haematological Cancers in First Nations Australians

Pathways to Healthy Hearts After Cancer for All

INTERNAL

Medical School

RELEASE: REdressing Long-tErM Antidepressant uSE in general practice

Many people get withdrawal symptoms when they try to stop antidepressants. So how can you safely stop?

Antidepressants in residential aged care: Exploring the views of residents and their family, facility managers, carers, nurses, GPs and pharmacists

Centre for Chronic Disease (CCD)

Morphological and ultrastructural studies of the kidney

Early determinants of adult health

Centre for Health System Reform and Integration

Virtual Integrated Practice (VIP) - supporting a sustainable rural workforce using telehealth (PhD project)

A systematic review of the challenges and barriers to implementation and adoption of the Patient-Centered Medical Home: lessons for Australian primary health care reform

Centre of Research Excellence in Advanced Cardio-respiratory Therapies Improving Organ Support (CRE ACTIONS)

Infections & biofilm formation after VAD implantation

Scientific interrogation of the clinical complications of clotting, bleeding and blood transfusions associated with mechanical assist devices (MADs) through an in-vivo ovine model

infective endocarditis Queensland (ieQ)

A 15 year review of Coxiella burnetii infective endocarditis in a tertiary cardiac centre in Queensland, Australia

The Queensland Staphylococcus Lugdunensis Bacteraemia Audit

Multiple Sclerosis Research Group

Research area: explore the safety and effectiveness of a new Epstein-Barr virus (EBV) treatment for those with MS

Rural Clinical School Research Centre

Risk factors for arterial catheter failure and complications during critical care hospitalisation: a secondary analysis of a multisite, randomised trial

Enhancing diagnostic value in urethral imaging: the case for urologist-performed urethrograms

Thoracic Research Centre

Research area: Established and emerging threats to health such as air pollution and carcinogens such as asbestos

Research area: Microbiome and breath metabolome

Cardiovascular Research Centre

Validation of a novel tool to identify people with deteriorating health due to advanced heart failure for future care planning

Cardiovascular outcomes in regional and remote Australia

UQ General Practice Research (UQGP)

The 3-Domains toolkit for assessing older drivers: pilot study in general practices and validation study in driving assessment clinic

INTERNAL

◆ UQ General Practice Research (UQGP)

The 3-Domains toolkit for assessing older drivers: pilot study in general practices and validation study in driving assessment clinic

◆ Nontuberculous Mycobacterial (NTM) Research Group

Research area: NTM infections associated with climate change and major weather events: enhancing surveillance and mitigation strategies

Research impact: mycobacterial bank (storing mycobacterial specimens for further study)

Faculty of Science

◆ School of Chemistry & Molecular Biosciences

◆ Science Education

Integration and evaluation of undergraduate research experiences, and assessment/feedback practices in large undergraduate microbiology courses.

Students' awareness of their own conceptual models in chemistry and their motivation to apply formative feedback in their learning.

◆ Biomolecular Chemistry

Organic and analytical chemistry – analysis and identification of toxins affecting livestock

Biomaterials for bone repair and regeneration

◆ Infection & Immunity

Molecular mechanisms of flavivirus replication and virus-host interaction

Immunotherapy of non-melanoma skin cancers

◆ Medicinal Chemistry

Nano drug delivery systems for therapeutic proteins and anticancer drugs

Bioavailability of natural products from herbal extracts

◆ Molecular Genetics & Genomics

Genetics of new sperm quality traits

Microbial solutions for the Bioeconomy

◆ Nanotechnology & Materials Chemistry

Understanding interfaces in organic electronics

Luminescent materials for displays, lasers & augmented realities

◆ Structural Biology and Biochemistry

Improving cancer treatment by targeting DNA replication and repair

Gut and oral microbiota composition and risk for preeclampsia

INTERNAL

✦ *School of the Environment*

✦ **Queensland Centre for Population Research**

Research area: Population Ageing and Composition

Research area: Economic change and globalisation

✦ **UQ City Impact Lab**

Research area: Social equity, inclusion and suburban change

EXTERNAL

Outside of UQ, there are various research institutes which facilitate space for students to **assist in research projects**. These organisations are great for **undergraduate research** opportunities as there are many **more ongoing projects**, more **faculties** and a greater likelihood of finding a research centre which specifically **targets different specialities or interests**.

Some people choose to **cold-contact** research facilities externally from UQ to participate in projects. If you are selected, this typically involves doing **volunteer** or **casual work** at the facility.

This type of application can be **helpful** for those who:

- ✦ would prefer to learn at a **faster rate**
- ✦ want to spend a **longer period of time** in a lab group (longer than a semester)
- ✦ have a focus on **publications** over purely studying/learning

However, this application method is a little **challenging** because:

- ✦ the **learning curve is steeper**, because you are less guided & you have to **'self-teach'** yourself many techniques
- ✦ it can be **harder to get a volunteer position** as the lab may not need/want volunteers

EXTERNAL

Here is a list of some commonly known institutes and hospitals which facilitate undergraduate research:

Australian Institute of Biotechnology and Nanotechnology (AIBN)



AIBN is a UQ-based institute focusing on integrating microbiology and nanotechnology into medical and environmental research. Their key areas of study include **precision nanomedicine, nanoengineered materials** and **advanced biomanufacturing**. This includes a variety of research topics which range from **protein manufacturing, genetic mapping, polymer synthesis** and **energy generation techniques**.

This institute is one to investigate for people interested in **discovery research** (understanding mechanisms behind drugs or materials to develop new ones), want a **wide range of topics** to choose from, or want a better understanding of **genetics, microbiology** or **molecular studies!**

Queensland Institute of Medical Research (QIMR)

QIMR is a **medicine-focused** institute, globally recognised for their contributions in their main research themes: **cancer, infection and inflammation, brain and health, population health, Aboriginal & Torres Strait Islander health** and **COVID-19 research**. Their research is holistic, considering both the **discovery of diseases** and their applications to **real patients and communities**.

They emphasise the **clinical applicability** of their work, developing **prevention strategies** for diseases, **diagnostic tests** and **treatments** for real-world patients and communities. Thus, QIMR is a worthwhile place to seek volunteering opportunities if you want a **wide range of research topics** to choose from or if you're looking for **medical-related research!**



EXTERNAL

Translational Research Institute (TRI)



TRI focuses on applying the **knowledge** gained from discovery and laboratory trials to individual and community healthcare. Specifically, they employ a **'bench-to-bedside'** approach, involving **both clinicians and discovery scientists in research simultaneously**. This results in **up-to-date doctors** and scientists who can further their knowledge from **real-world issues**, therefore ensuring **best patient and community care**.

This makes TRI unique in its research approach and flow of information, emphasising the importance of **industry, government, doctors and educators in their laboratory research**. They apply these techniques to their extensive research themes, including **cancer, dermatology, gastroenterology & hepatology, genomics, immunology, metabolomics and trauma**. For people passionate about the usefulness of research outside of pure science, and the process of developing treatments and prevention strategies for disease, TRI is definitely a facility to look into!

Queensland Brain Institute (QBI)

QBI is a **neuroscience-based** facility, investigating the brain's **functions**, the effects of **brain disease and damage, mental health and behaviour**. They investigate brain function at **various levels**, from a cellular and molecular focus to clinical studies. This is exemplified in their research themes, being **synaptic, cellular & molecular neuroscience, circuits, systems and computational neuroscience, cognitive, behavioural and sensory neuroscience and clinical neuroscience**. Thus, their research has **many applications**, such as drug trials, behavioural studies or genomics, which may be intriguing **even if you aren't interested in neuroscience** specifically. Located at the **St Lucia Campus**, this is a convenient option for those **living on campus**, or if you don't want to travel so far from uni.



EXTERNAL

Institute of Molecular Bioscience (IMB)



IMB is labelled Australia's #1 research institute in terms of research output, being **national and international leaders** in **drug discovery**. They emphasise their unique approach to research: investigating **natural** patterns and substances to create **sustainable** and **environmentally friendly cures** for disease. Their innovative, conservationist methods may interest students who appreciate the importance of the **environmental impact of medical research** and creating **sustainable cures**. Their work includes four key interests: **cell biology, chemistry & drug discovery, superbug solutions** and **population & disease genomics**.

Stationed **near Chancellors' Place** at the UQ campus, it is easily accessible and many of their researchers are **affiliated**, and even **teach at UQ** – this is helpful as it may be more **convenient to travel** to, and to get into **contact with researchers!**

EXTERNAL

Hospitals Facilitating Research

There are various hospitals in Brisbane which have their own research institutes, or facilitate research opportunities for **research project courses!** They are helpful places to undertake **clinical research**, as they often emphasise clinical trials in their research projects. This is a list of local hospitals to look into!

UQ Centre of Clinical Research (UQCCR)

UQCCR is located in the RBWH hospital in Herston, and has a similar **'bench to bedside'** approach to other hospital-related research centres like TRI. This makes it especially helpful for students **studying at the Herston Campus**, and for those interested in **clinical research!** They explore a variety of fields of study, such as **neurological diseases** (dementia, epilepsy, motor neurone multiple sclerosis, Parkinson's disease), **cancer, infectious disease, infertility, pregnancy and newborn research and gonadal & urogenital conditions,**

Further, they have a specialised department exploring the role of **'extracellular vesicles'**, recently discovered nanoparticles involved in communication between cells. These cutting-edge trials **span various disciplines**, not just limited to healthcare – this is helpful for people who want to gain very versatile research skills, and practice working in an interdisciplinary workspace!



Mater Research Institute (MRI)

The MRI is likely familiar to many allied health students as this facility is located **inside the Mater Hospital**, making it a convenient location! MRI is a leading institute in **translational research**, much like TRI: they focus on **integrating medical research into practice** at the hospital, meaning they complete lots of **clinical trials** in their research. They investigate various fields of research, such as **cancer, chronic and integrated care, healthcare delivery & innovation, mother & baby** and **neuroscience**. They are very open to **undergraduate research opportunities** for work and volunteering, making it accessible for people who are beginners in their research journey!



EXTERNAL

The Prince Charles Hospital (TPCH)



As a hospital, TPCH has a heavy focus on **clinical trials** and **patient wellbeing** in their research projects. As such, their key themes of research are **surgery, medicine, clinical care** and **mental health**.

Additionally, they are home to the **Cardiology Clinical Research Centre (CCRC)**, a leading cardiology centre and conductor of **clinical trials** and **investigator initiated research** (research managed by a non-pharmaceutical company). Investigator initiated research can encourage **high quality research**, which can be a helpful learning experience during volunteering or work! The **cardiological focus** of this research centre is also beneficial for those wanting to pursue **cardiology** or wanting to learn more about this area of study.

Wesley Research Institute (WRI)

WRI is a **non-profit** organisation, associated with four Queensland hospitals (The Wesley Hospital, St Andrew's War Memorial Hospital, Buderim Private Hospital and St Stephen's Hospital in Hervey Bay) and UnitingCare. They have a variety of research themes, consisting of **neurology, coeliac disease & immune health, cardiovascular & critical care, orthopaedics, health services research, rare diseases** and **cancer** research.

They are also home to the **Queensland Spatial Biology Centre (QSBC)**, which investigates **intercellular interactions within tissue** to understand various diseases. WRI is definitely a place to investigate if you want to support non-profit research, if you are looking for a wide range of possible research themes or are interested in medicine at a more **cellular level**.



EXTERNAL

Centre for Health Services Research (CHSR)

CHSR, located in the **Princess Alexandra Hospital**, emphasises **improving clinical practice** in and out of hospitals. By partnering with universities, governments, communities and researchers, they aim to achieve the best community health approaches.

The extensive scope of their research covers multiple themes, which include **geriatric medicine, aged care, digital & online health, health economics & modelling, substance use & mental health, and clinical informatics**, to name a few. These unique areas of study are helpful in gaining a **better understanding** of the **healthcare system**, how **different departments interact** in healthcare, and the **systemic issues** influencing community health!



WHERE is right for YOU?

Outside of choosing based on research institutes, you can also choose where you want to complete your research based on **personal skills** or general **topics of interest!** These methods of selecting research opportunities can really help **hone specific techniques, ensure you'll be interested** in the work you do, and make it **easier to switch** into research opportunities that you may be more interested in!

Techniques/Skills

Every research group will have wildly **different focuses**: this can range from the practical impact they aim to achieve, to the biological mechanisms they analyse. However, researchers will often use **very similar lab techniques** to gather their results. That means that choosing your research group based on the lab skills they require or the analytical techniques they use makes your volunteering experience much **more widely applicable**.

It also means you could **apply for volunteering positions at various different labs because of the practical skills you've learned** during a seemingly unrelated research experience. For example, if a research group you're interested in is analysing tissue samples, it is very likely that they will use a technique called **'immunohistochemistry'**. This is one of the most common ways of analysing tissue, so if you apply to volunteer at another lab involved in tissue analysis, the likelihood of them using immunohistochemistry techniques is very high!

Research Topic

Many research topics, such as a **category of disease** (e.g. cancer), can exist in various parts of the body, or are **applicable to many areas** of research (e.g. infectious disease can be related to vaccine research, public health studies, or prevention-related studies). Seeking research experience based on a topic that interests you is helpful in **motivating** you through the (admittedly tough) research process, and it makes your research experience **applicable** to many more lab groups when applying for further research positions!

HOW

It is inspiring to have new and fresh information to get your future in research going, however, getting stuck on *how* to get your applications in is a common road-blocker.

"How do I make make a good impression?"

"How can I set myself apart without having outstanding experience prior?"

If these are questions that you have, read ahead to find out *how* to overcome these issues!

HOW?

I'm sure many of us are now thinking how to put all of this "research talk" into action, or more importantly, **HOW** one can get started with this process.

A popular method of contacting is simply through **emailing lecturers of your courses**. At times, this is even encouraged as lecturers are often researchers in their specialized field—definitely jump onto the sneaky plugs mentioned during lectures regarding their projects! Do note to be prepared with a CV, as it is not uncommon for them to check out your previous experiences. While this method of contact has its pros in simultaneously covering multiple bases, it is a highly unreliable trail that often runs cold. Relying solely on an email not only confines your ability to fully express your enthusiasm about their research, but also completely removes the opportunity for them to make an accurate judgement of character, thus, limiting your chances of being selected.

HOT TIP!

A piece of advice from **Jack Wang** himself is to also make an effort to speak with lecturers after lectures or to even arrange a meeting with them outside of classes, no matter how daunting it may seem. Making a physical impression on these researchers allows for more in-depth and meaningful conversations surrounding both the research topic and your involvement (given that you have read over their papers and current projects). Even a short introduction greatly increases the probability of receiving a reply simply because they have now heard your name more than once (capitalise off frequency bias!).

It must also be understood that this phase of the research process is where you are **most likely to face rejection**, and ***that is okay***. Rejection could stem from a multitude of reasons, not necessarily because of a negative judgement on your character or qualifications. This **should not be a deterrent for applying** nor one that demoralises you. **3**. In the case of rejection or even in attempts to maximise your opportunities, it is also a good idea to shoot your shot to multiple researchers or multiple research institutes simultaneously (lessening the blow when the rejection replies start piling in :)).

Getting the contacting part down is only half of the work—hundreds of other applicants are doing the same—now, **HOW** do you be the **great** amongst all the other **goods**?

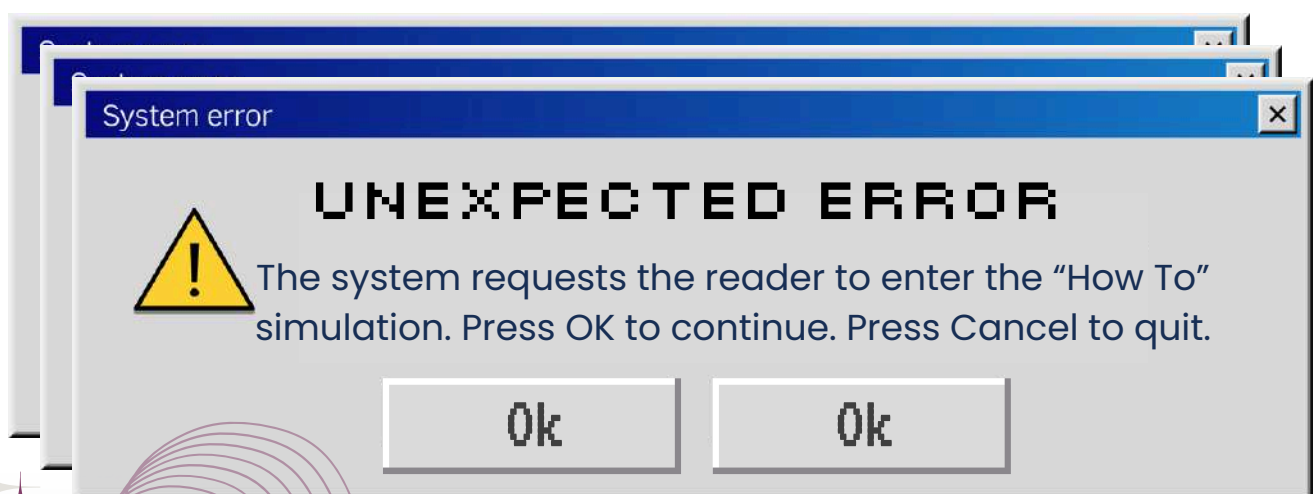
It is simpler than it seems: **show an interest**. Realistically, other competitors are soundly qualified with potentially better grades, achievements, or experiences. But remember, researchers are people too, and simply put, will likely choose someone who cares about what they are researching. A good start is by doing some research about the research you're heading into (ironic)—the aim of their research, the phase of research they are currently in, what it is like on a typical day in their lab, etc.

This demonstrates your passion not only in the work they do, but it also hints towards the type of character you could add to their team via your willingness to spend time and efforts to come prepared. And when you're finally sat face-to-face with a potential research supervisor, you will impress them with your enthusiasm and knowledge about their work and all is well!

“But, I don't know what to put into an email, nor have I ever written CV! How can I start emailing supervisors when I don't know what to tell them?”

Understandably, it is much harder to understand what comprises a good and professional email/CV if you are unfamiliar with portraying yourself *exactly* as the ideal research applicant they seek, let alone, a successful one (which is why you're reading this guide, hm?).

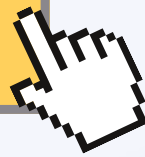
Fret not, for this wouldn't be a **HOW** section if we didn't also include *how* to sell yourself as a personified green-flag applicant by revealing minute, yet, influential details researchers actively look out for in reviewing your submissions.



HOW TO:

Ok

EMAIL



REMINDER!

This is likely your first point of contact with your potential supervisor – you need this to hit hard. Here are a few general pointers to be memorable, yet clear with your intentions.

Yes

INTRODUCTION

Just like you would in-person, introduce yourself! Let them know the name and the background of the person they'll be writing their acceptance email to!

INTENTIONS

It's always good to be upfront about your expectations regarding the research you're heading towards (as shown in the example), even if you aren't looking for something specific – treat it like a job application.

SUBJECT: RESEARCH APPLICATION REQUEST

DEAR TEAM/POTENTIAL SUPERVISOR,

I HOPE THIS MESSAGE FINDS YOU WELL!

MY NAME IS JANE DOE AND I AM CURRENTLY A FIRST-YEAR BIOMEDICAL SCIENCE STUDENT WITH PLANS OF STUDYING MEDICINE IN THE FUTURE.

I AM WRITING TO INQUIRE ABOUT ANY POTENTIAL VOLUNTEER RESEARCH ASSISTANT ROLES THAT ARE AVAILABLE THAT I COULD UNDERTAKE THROUGHOUT SEMESTER 2. I UNDERSTAND THAT THE INSTITUTE OFFERS SUMMER AND WINTER PROGRAMS, BUT I WAS MORE INTERESTED IN ANY PART-TIME ROLES THAT I COULD UNDERTAKE THROUGHOUT SEMESTER 2.

CONT'D: RESEARCH APPLICATION REQUEST

WHILST I HAVE NO FORMAL RESEARCH EXPERIENCE, I AM HIGHLY MOTIVATED TO LEARN AND CONTRIBUTE TO THE WORK BEING DONE AT YOUR LABORATORY. I AM CONFIDENT IN MY ABILITY TO ASSIST WITH TASKS INCLUDING PIPETTING AND DATA ANALYSIS. FURTHERMORE, I BELIEVE THAT MY PASSION IN MICROBIOLOGY AND WILLINGNESS TO FURTHER DEVELOP SKILLS IN LITERATURE REVIEW AND RESEARCH METHODOLOGY WOULD BE VALUABLE TO THE TEAM.

FICK ME! CHOOSE ME!

It is also helpful to give context as to why you're emailing *them* in particular. Do you have previous background relating to their field of research? Did you have them as a lecturer in one of your courses? Is it simply because you find their research interesting?

Let them know!

Have confidence in the skills you can offer and making a quick mention of such also goes a long way. While this should also be mentioned in your CV, this is a fail-safe method to still ensure you have fully showcased your capabilities and potential as an asset for their team (in case they don't make it to your CV oops).

CONT'D: RESEARCH APPLICATION REQUEST

GAINING HANDS-ON RESEARCH EXPERIENCE AND LEARNING FROM THE INCREDIBLE INDIVIDUALS AT YOUR LABORATORY IS INVALUABLE TO ME, ESPECIALLY AS I AIM TO SPECIALIZE IN MICROBIOLOGY IN THE FUTURE. I'VE ATTACHED MY RESUME AND ACADEMIC TRANSCRIPT IF YOU WOULD LIKE TO LEARN MORE ABOUT MY BACKGROUND AND INTERESTS. IF FURTHER INFORMATION ABOUT MY BACKGROUND IS REQUIRED, PLEASE DO NOT HESITATE TO CONTACT ME.

SWEET TALK ;) 

Just like an interview, tell them what makes their research so special to you? A little sweet-talking has never harmed anyone before...

Give them a little heads up about the CV you've also worked really hard on, because you have indeed read pages 40-42 of the UQPMS Research Guide. Please remember to **actually attach** your CV to the email itself too.

Finally, don't forget to thank them for their time and sign off professionally!



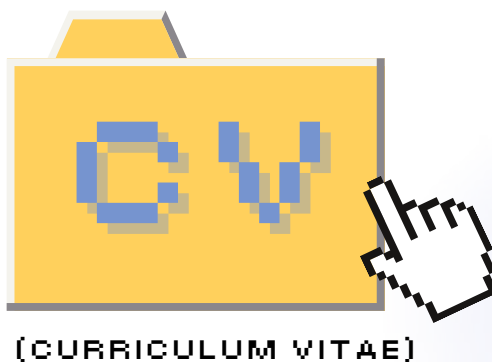
WARNING!

Leaving this page will take you to "How to: CV". Do you wish to proceed?

Ok

HOW TO:

Ok



First things first, let's clarify the difference between a **CV** and a **resume**.

RESUME:

A brief summary of all of your achievements—academic, past/present experience and outstanding traits.

CV:

Focuses on the details that are not covered by the resume, particularly, components of your previous experiences or skills that are suited for the position you are applying for.

With that being said, if you're applying for a research position that involves data analysis, this **has** to be signposted throughout your CV. The example below demonstrates how this information can be incorporated throughout the CV:

CONTACT DETAILS

Name, contact information (mobile/email); that's it. Maybe even a sentence or two about yourself and what you can contribute to their laboratory—nothing crazy.

However, everything listed here should be information that they could have gathered from your email.

JANE DOE
(+61) 0000 0000 • janedoe@gmail.com

I believe that my unique experience and enthusiasm towards microbiology allows me to be a suitable candidate as a research assistant in your laboratory. If given the opportunity, this will be an immeasurably beneficial experience to further hone my research skills and deepen my passion for this field.

SKILLS

- Serial dilutions
- Inoculation & incubation
- Conducting and interpreting gram stains
- Data-analysis with R Studio and Excel
- Detailed notetaking of procedure and results

SKILLS

List a mix of hard skills (left column) and soft skills (right column) you could have gained from *anywhere*—pracs from a previous course, that random workshop you decided to attend during high school, as long as it is **relevant AND specific** to the position you are applying for.

EDUCATION

FEBRUARY 2023 – PRESENT

THE UNIVERSITY OF QUEENSLAND, BACHELOR OF SCIENCE

- Awarded the Dean's Commendations of Academic Excellence.
- Achieved a GPA of 6.5; a WAM of 89% in all courses.
- Gained experience in various laboratory skills (i.e. utilizing the aseptic technique, gram staining, 16-streak plating, serial dilutions) and achieved a perfect score for the laboratory proficiency exam.
- Conducted a research project investigating nine bacterium types and their respective resistance to antibiotics, alongside its relevance to our understanding of superbugs.

JANUARY 2016 – DECEMBER 2021

IMAGINARY STATE HIGHSCHOOL

- Achieved an ATAR of 93.75.
- Awarded Full Colors with honors (average A grade in all subjects & state recognition of sports achievements).

FLEX YOUR STATS!!

This is your time to brag! Show off! Tell them how well you did (or didn't) in your previous years! It doesn't matter if your grades are/weren't the best (once again, formalities-sake), but this is where you can also go into detail about the skills you mentioned in the previous section.

HOT TIP!

The highlighted portion seems impressive, doesn't it? It's really just the weekly practical component and the 20% compulsory assessment of MICR2000, but phrased very *nicely*, and now Jane Doe seems like an overachiever in her own right. Get creative with how you can do the same with the courses you have completed by phrasing it into ✨experience✨.

HAVING EXPERIENCE

(TRYHARD)

Having experience is one of the largest advantages you can have over other applicants, so you *want* to go into as much (relevant) detail as you can. Be sure that this is not simply a repeat to what you have described in the "Education" section, but focuses on the details of what you have learnt and done.

EXPERIENCE

JUNE 2022 – PRESENT

RESEARCH ASSISTANT, THE UNIVERSITY OF QUEENSLAND

- Assisting in wet labs via pipetting and plating cultures, alongside the collection and recording of data.

JANUARY 2023 – AUGUST 2023

TUTOR

- Tutoring high school biology and chemistry.
- Communicating with different parties and conducting extensive research to develop appropriate study strategies.

NO EXPERIENCE

It's completely fine not having prior experience, which simply means that you have to find a way to put what you *have* done in a manner that demonstrates your skills and qualities to further enhance the character you're selling. The more is not necessarily the merrier in this case, as CVs tend to be brief, so try to build on instances that will assist in maximizing your chances of standing out.



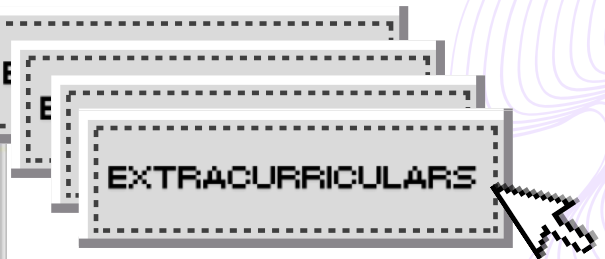
EXTRACURRICULAR ACTIVITIES

MARCH 2020 – NOVEMBER 2021
FOUNDER/PRESIDENT OF THE MICROBIOLOGY CLUB, IMAGINARY STATE HIGH SCHOOL

- Actively organized and ran weekly informative sessions regarding the field of microbiology (i.e bacteria, viruses, fungi).
- Worked in conjunction with other schools to host talk sessions regarding microbiology-related careers and research opportunities.

JANUARY 2016 – DECEMBER 2021
VOLLEYBALL, IMAGINARY STATE HIGH SCHOOL

- Received the U18 Queensland State Champion title (2019, 2021).
- Led the school's volleyball team as a team captain (2019-2021) and conducted weekly training sessions.



Like the “Experience” section, everyone’s extracurriculars are bound to differ, yet, can be framed in a manner to accentuate your qualities and personality. It’s a bonus having interests that coincide with your desired position (which you should definitely mention and build on!), as it shows the researchers that your interest in this field transcends academia and even bleeds into your personal life.

This is, once again, not to discourage those that do not have overlapping extracurriculars (you would fall into the majority, if it is any consolation at all). It is still good to mention what you have done, if at all, as this is an opportunity to depict your character, interests, and potential capabilities in a separate light that still benefits you.



It should be noted that, generally, while CVs are good to have, they are also simply for formalities-sake. Despite this, in certain areas and applications for external and summer/winter research programs, they do have a greater significance. However, it is not something to stress about and hopefully, these tips help give you an edge.



System error

UNEXPECTED ERROR

The system has crashed. Press OK to return to Home page.

Ok



F A Q

FAQ

Research papers are confusing... how do I go about reading one?

There isn't a prescriptive way to read a research paper – it is more about starting and dissecting your way through it. Many papers assume you know the relevant terminology and techniques they use, which can make them a bit confusing! Here are a few steps to get you started:

- ◆ Start with the abstract and introduction – Google the terms you don't know to give you a general picture of the article
- ◆ Try and find some systematic or literature reviews available to analyse the topics. This gives you more context about the article and helps you to understand key results or terminology in the article!
- ◆ Go straight to the results: you can get a pretty good understanding of the article from the graphs, tables and figure labels, since this summarises the main messages of the paper
- ◆ Read the discussion: this will help you contextualise the results you interpreted in the last step, and it also summarises the main points the authors have identified!
- ◆ Finally, go back through the rest of the article. Since you have been able to glean the main findings of the paper and the variables they investigated, more technical sections like the methodology will make much more sense!

But I haven't done anything even close to a research project! Can I still apply?

Of course you can! There is no harm in giving it a shot. If you are worried about lacking key skills, the majority of roles as undergraduate students will require **no prior lab experience** such as coding or histology. However, there is an assumption that you will be **keen to learn on the job** and **prepared to do further reading** once you are in it. Researchers are looking more for those **'soft' skills** like **communication, teamwork, and adaptability**, which you can promote when applying.

And don't forget about the work you've already done as a **part of your degree!** Many courses at UQ are **teaching core research skills** without you realising it (this is definitely something to **highlight in your applications**). For example, it can be useful to say that you have some **Python experience from SCIE1000**, or some **wet lab skills from MICR2000** – this is a totally valid way to highlight your skills to lab groups!