



THE UNIVERSITY OF  
MELBOURNE

# WELCOME TO THE SCHOOL OF BIOMEDICAL SCIENCES



Part of the southern hemisphere's largest biomedical precinct

**Collaboration** Computational biology  
**Medicine** Big data analysis  
 Discovery science  
**Excellence** Clinician scientists  
**Translation** **Laboratory** Biomedical Student Society  
**Biochemistry** **Anatomy** **Therapeutics**  
 Early-Mid Career Researchers Association  
**Medical research** **Immunology** **Global-leaders**  
 Human body Physiology  
 School of **Biomedical Sciences** **Microbiology**  
 Teaching excellence **Pharmacology** Bachelor of Biomedicine Awards  
 University of Melbourne  
**Neuroscience** **HIV**  
**World-class** **Cells** **Biomedicine** **Academics**  
 Melbourne Biomedical Precinct  
**Genomics** Postdoctoral researchers  
 Clinical and population settings **Biomedical sciences**  
**Molecular Biology**  
 Health professionals **Immune system**  
**Advanced imaging**

WELCOME	2
OUR LEADERSHIP TEAM	3
SCHOOL OF BIOMEDICAL SCIENCES AT-A-GLANCE	4
INSIDE OUR THREE DEPARTMENTS	6
AROUND THE MELBOURNE BIOMEDICAL PRECINCT	9
CAREER OPPORTUNITIES FOR STUDENTS	10
PEER MENTORS	12
WHERE ARE THEY NOW	14
WORLD-CLASS RESEARCHERS	16
AWARD-WINNING TEACHERS	18
SCHOOL NEWS & EVENTS	20

# WELCOME TO THE SCHOOL OF BIOMEDICAL SCIENCES

A new era of medical research and biomedical learning is here

The spotlight shines bright on Biomedical Sciences as a result of the COVID-19 pandemic. The importance of ground-breaking research and learning with the ultimate aim of advancing human health has never been so important.

As Microbiology and Immunology researchers from the School continue to play a pivotal, global role in understanding the impact of SARS-CoV-2, our students learn first-hand from their discoveries during one of the greatest health challenges of our time.

Concurrently, our work in the fields of Anatomy and Physiology; as well as Biochemistry and Pharmacology continue to forge new frontiers.

The University has been teaching and researching biomedical sciences for 160 years, but this is a new era for the sector. New technologies are allowing researchers to obtain large and complex amounts of information and use this knowledge in ways that we could only dream about 10 years ago.

We've seen innovations in big data analysis, genomics, computational biology and advanced imaging, which are opening new ways of understanding the human body.

Everyday students and academics push the boundaries of what we see and understand. People are studying the intimate workings of cells in real time, others using data from around the globe to try and stay ahead of deadly viruses, and some focus on major advances in genomics to understand the complex interactions of a person's biology and the environment – and their impact on disease.

Thank you for being part of our mission to advance human health in Australia, and around the world..

**Professor Jennifer Wilkinson-Berka**

Head of the School of Biomedical Sciences

**Jennifer was appointed Head of the School of Biomedical Sciences** in August 2020. In the previous year, Jennifer became Head of the Department of Anatomy and Physiology at the University of Melbourne, following over 12 years in research and leadership roles at Monash University. These positions included Associate Dean Research (Central Clinical School) and Acting Head of the Department of Immunology and Pathology.

Jennifer has a longstanding research interest in the contribution of the renin-angiotensin aldosterone system to diabetic complications stemming from her time in the Department of Anatomy and Cell Biology (now Neuroscience) and Department of Physiology at the University of Melbourne. She currently heads a research laboratory that investigates vasoactive factors and the immune system in neovascular retinopathies with a view to developing new therapeutics for clinical translation. Jennifer ranks in top 1% in Expertscape index as a global expert in Recognising Retinopathy of Prematurity.

## School leadership team

Meet those who are inspired to deliver research excellence and innovative teaching across the School



**HEAD OF SCHOOL**  
Professor Jennifer Wilkinson-Berka



**DEPUTY HEAD OF SCHOOL AND HEAD OF THE DEPARTMENT OF BIOCHEMISTRY AND PHARMACOLOGY**  
Professor Ian van Driel



**DIRECTOR OF RESEARCH**  
Professor Sammy Bedoui



**HEAD OF THE DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY**  
Professor Andrew Brooks



**BIOMEDICINE PROGRAM DIRECTOR**  
Associate Professor James Zíogas



**HEAD OF THE DEPARTMENT OF ANATOMY AND PHYSIOLOGY**  
Professor Matt Watt



**CHAIR OF THE TEACHING AND LEARNING COMMITTEE**  
Associate Professor Heather Verkade



**CHAIR OF RESEARCH TRAINING**  
Associate Professor Justine Mintern

# School of Biomedical Sciences at-a-glance

## An exhilarating place to immerse yourself in biomedicine. Here's Why.

### UNDERGRADUATE

Every year around 2500 full-time equivalent students undertake studies in biomedical sciences. At the undergraduate level, the Bachelor of Biomedicine is ideal preparation for a career in medicine and professional health. At the core of the degree is knowledge of the normal structure and function of the body and consideration of the determinants of disease.

### GRADUATE

Research training is a priority for the School with programs at Honours, Masters and PhD level. The Master of Biomedical Sciences is a course work program with a substantial research component that includes an Enterprise stream offered in collaboration with Johns Hopkins University, USA. International initiatives, such as a PhD exchange program with Bonn University in Germany, also create opportunities for early career researchers to develop global networks.

### TEACHING

Award-winning teachers, many who are also researchers or clinicians, inspire the next generation of biomedical professionals. Students are empowered to think conceptually about the problems affecting global human health. Teachers at the School

have received the prestigious David White Award for teaching, along with other University and national awards for program innovation, excellence in engagement and outstanding contributions to student learning.

### OUTCOMES

The University is proud to be ranked number eight in the world for graduate employability.\* The Bachelor of Biomedicine has the flexibility to deliver a range of outcomes. Students are more frequently selected into the Melbourne Medical program than those from any other program in Australia. Others follow pursuit such as dentistry, biomedical research, optometry, physiotherapy or bioengineering. A small but growing number combine the degree with graduate law, commerce or management.

### PRECINCT

Imagine studying or working in the largest biomedical precinct in the southern hemisphere. More than 40 hospitals, research, teaching and biotechnology organisations surround the School of Biomedical Sciences – making it a highly sought-after base for global biomedical leaders. The School is actively engaged with industry in a variety of ways and has its own Industry Advisory Board.

### RESEARCH

**85+**

research groups across three departments

**1063**

peer-reviewed publications annually

**21.9%**

of publications in the top 10% of the world's most cited

**200+**

PhD students each year

**\$56M**

in HERDC research income annually

### STUDENTS

**2500+**

equivalent full-time students

**2000**

undergraduates

**300**

higher degree coursework

**1900+**

Australian and 600+ international

**200**

higher degree research

### FACULTY OF MEDICINE, DENTISTRY AND HEALTH SCIENCES

**1400+**

salaried research staff

**4800+**

honorary staff

**25**

highly cited researchers

**1700+**

graduate research students

**6000+**

research publications each year

**37**

schools and departments

**14**

campuses across Victoria

**#1**  
University in Australia  
**#33**  
in the world

**#1**  
in Australia  
**#14**  
in the world  
for clinical and health

**#1**  
in Australia  
**#15**  
in the world for  
anatomy and physiology

**#1**  
in Australia  
**#14**  
in the world for  
clinical medicine

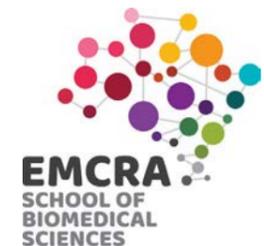


**#8**  
in the world for  
graduate employability



## Join the Biomedicine Student Society

Run by students for students, BSS is one of the most active and inclusive of the University student groups. For more information on the study groups, mentor programme, charity support and social events, search for Biomed Bear on Facebook.



## Check out the Early-Mid Career Researchers Association (EMCRA)

Supporting postdoctoral researchers in the School, EMCRA offers an annual salary guarantee award for research fellows. To learn about the EMCRA Collaborative Award and networking opportunities visit: [biomedicalsciences.unimelb.edu.au/research/emcra](http://biomedicalsciences.unimelb.edu.au/research/emcra)

\* Times Higher Education World University Rankings, Academic Ranking of World Universities, Clarivat

# Inside our three departments

Taking a strategic approach to research, learning and industry growth

## Anatomy and Physiology

Advancing the research and teaching of developmental, degenerative and chronic disease.

“Established in 1862 and with a strong record of excellence, our Department’s goal is to remain at the forefront of scientific research using novel and imaginative research methods to study developmental, degenerative and chronic disease.” – **Professor Matt Watt, Head of Department, BSc, MSc, PhD**



**Research spotlight:**  
Dr Melanie Eckersley-Maslin awarded prestigious Snow Fellowship.

*The Department of Anatomy and Physiology research fellow and group leader at the Peter MacCallum Cancer Centre received an \$8 million fellowship.*

Recognised as an emerging global research leader who shows the potential to drive, manage and influence the next generation of health and medical innovation, Dr Melanie Eckersley-Maslin is set to advance her understanding of cancer progression.



## Research themes

High impact discoveries are at the heart of the School’s three overarching research themes.

**Infection & Immunity** – led by Professor Sammy Bedoui

The interplay between myriads of microbes and the immune system is central to a healthy existence and forms the basis for many disorders, especially infectious diseases. However, our understanding of many microbes, their interaction with the host and how immune response are initiated, regulated and directed against microbial encounters, is far from complete.

Through fundamental research activities, performed in conjunction with clinical and commercial collaborators, we are advancing our understanding of microbial physiology, host-pathogen interactions and the immune system itself. We are also devising strategies for safer and more effective forms of immunotherapy and improved vaccine technologies to prevent and treat infection.

**Neuroscience** – led by Professor Stuart Mazzone

The nervous system is an integral regulator of all our bodily functions. It is essential for our interpretation, experiences and reactions formed from the physical world and represents the seat of our consciousness, memories, self-awareness – and, hence, our individuality.

The field of neuroscience is an exciting frontier in biology because of the astonishing degree of complexity involved in how the nervous system performs its diverse functions. Until recently, understanding this complexity seemed beyond reach. Now, thanks to a new era of biomedical sciences, advanced technologies and unprecedented opportunities are resulting in innovative neuroscience research and a rapid phase of discovery.

**Metabolic Health** – led by Dr Magdalena Montgomery & Professor Malcolm McConville

The past decade has seen a renewed interest in metabolic research, which is reshaping our understanding of human physiology and disease. Studies on cellular metabolism – driven in part by advances in technology – have provided new insights into aging, the role of the microbiome and diet, and the underlying causes of cancers

and metabolic diseases such as obesity, diabetes and cardiovascular disease.

Researchers with expertise in the molecular, analytical and clinical sciences drive breakthrough discovery and translational research in cellular metabolism and create an international centre of excellence for research into metabolic disease.

**Development & Differentiation** – led by Professor Christine Wells

Development is a capability that lies at the heart of Melbourne’s research and educational programs into the human body. Whether understanding normal human biology or seeking to treat disease, medical research requires sophisticated analysis of the growth, development and specialisation of the cells that make up the tissues and organs of our bodies.

This research area brings together experts in anatomical sciences, stem cell biology, clinical and developmental biology, genetics and computational biology. In an exciting period of biomedical sciences, this research scales across biological modalities from molecular mechanisms of cellular behaviour, towards understanding physiological contexts and clinical implications of those cellular phenotypes.

Visit: [biomedicalsciences.unimelb.edu.au/research](http://biomedicalsciences.unimelb.edu.au/research)

## Biochemistry and Pharmacology

Advancing the research and teaching of the molecular understanding of disease, drug discovery and development.

“This department has remarkable breadth and depth in research expertise that underpin our key themes of molecular understanding of disease, translational research, drug discovery and development.” – **Professor Ian van Driel, Head of Department, BSc, MSc, PhD**



**Research spotlight:**  
Professor Leann Tilley helps lead development of new Malaria treatment.

*International effort to discover an antimalarial treatment for a disease that causes more than 400,000 deaths a year.*

Professor Leann Tilley and her colleagues, from the Department of Biochemistry and Pharmacology and Bio21 Institute, together with international partners, developed a new class of inhibitors that are specific for the malaria parasite.



## Microbiology and Immunology

School researchers and teachers of infectious diseases, antimicrobial resistance and healthcare associated infections work from the Peter Doherty Institute of Infection and Immunology.

“The COVID-19 pandemic has highlighted the value of science to society and the potential of scientists to not only ‘discover things’, but to actually have profound impacts on our life.” – **Professor Andrew Brooks, Head of Department and Deputy Director of the Doherty Institute, B.SC (Hons), PHD**



**Research spotlight:**  
Mapping an effective immune response to COVID-19.

*Melbourne researchers have systematically mapped the immune response to COVID-19 identifying how antibodies develop in response to SARS-CoV2 and new insights into why some people develop severe disease.*

The team, led by Department of Microbiology and Immunology Professor Katherine Kedzierska, a laboratory head at the Peter Doherty Institute for Infection and Immunity, identified that multiple arms of the immune system are involved in the response.

## Centres And Units

Bridging the gap between discovery science and translation into clinical and population settings.

### ARC Industrial Transformation Training Centre for Personalised Therapeutic Technologies

Advancing technologies to remove long standing barriers to new drug discovery and development.

### Australian Venom Research Unit

Researching injuries and deaths caused by venomous snakes, spiders, marine creatures and other organisms.

### Centre for Muscle Research

Investigating the mechanisms underlying skeletal muscle wasting and weakness.

### Centre for Stem Cell Systems

Maximising the visibility, understanding and translational impact of stem cell research and technologies.

### Lung Health Research Centre

Advancing basic and translational lung disease research to improve lung health.

## Around the Melbourne Biomedical Precinct

The School of Biomedical Sciences is part of the largest biomedical precinct in the southern hemisphere.

Melbourne’s position as a world leader in biomedical research was strengthened in 2016 when the Victorian State Government established the Melbourne Biomedical Precinct Office.

As the country’s leading research University, we are proud to be at the epicentre of this stimulating environment where the next generation of outstanding achievers learn alongside global experts in their field. We share the Precinct’s commitment to pioneer the world’s best practices in patient treatment and care for the benefit of not only Australians, but people all over the world.



BioCurate

CSL Ltd

The Bio21 Molecular Science and Biotechnology Institute

Peter Doherty Institute for Infection and Immunology

**1 of the world's top 5 biomedical precincts**

**40+** hospitals, research, teaching and biotechnology organisations

**10,000+** researchers engaged in breakthrough biomedical and healthcare research

**28,000** people employed in the Precinct, who contribute \$3.6 billion to the Australian economy

To stay up to date with the School’s latest research, news and events visit [biomedicalsciences.unimelb.edu.au](http://biomedicalsciences.unimelb.edu.au)

# Career opportunities for students

The Bachelor of Biomedicine is ideal preparation for a career in medicine and professional health, but also has the flexibility to deliver a range of outcomes.

Students are more frequently selected into the Melbourne Medical program than those from any other program in Australia. Others follow pursuits such as dentistry, biomedical research, optometry, physiotherapy or bioengineering. A small but growing number combine the degree with graduate law, commerce or management.

What do our students do after graduating?

## A CAREER IN THE HEALTH SCIENCES

Many Biomedicine graduates undertake graduate study leading to professional careers in medicine and the health sciences.

## A CAREER IN BIOMEDICAL RESEARCH

You can also pursue a career in biomedical research by undertaking a research higher degree (Masters or PhD).

Depending on your major – and there are 14 to choose from – you could pursue the following career opportunities:

- **Biochemistry and molecular biology:** medical research, biotechnology, agricultural and medical support industries, education
- **Bioengineering systems:** clinical engineering, research and development in medical technology
- **Biotechnology:** food technician roles, forensic science, human technology, agribusiness
- **Cell and developmental biology:** diagnostic laboratories, government agencies, medico-legal industry
- **Genetics:** conservation, genetic counselling, teaching, forensic science, publishing
- **Human nutrition:** nutrition, public health, food policy and regulation
- **Human structure and function:** hospital and university research, scientific journalism, pharmaceutical consultancy, teaching



- **Immunology:** infectious diseases, diagnostics, molecular biology, biotechnology, vaccinology, biosafety and regulation
  - **Medicine:** general medical practice, surgery, research, internal medicine, radiology, pathology and policy
  - **Microbiology and immunology:** infectious diseases, diagnostics, molecular biology, biotechnology, vaccinology, antimicrobial chemotherapeutics, biosafety and regulation
  - **Neuroscience:** drug development, neuropsychology, audiology, neurochemistry, brain imaging
  - **Pathology:** pharmaceuticals, military, biomedical and biotechnology consulting, research
  - **Pharmacology:** drug research and development, clinical trials management, pharmaceutical marketing and sales, drug safety and evaluation
  - **Physiology:** CSIRO research, sports science, biomedical technician, medico-scientific communication, cardiac rehabilitation
  - **Psychology:** clinical psychology, clinical neuropsychology, community psychology, counselling psychology, educational psychology, forensic psychology, health psychology, organisational/industrial psychology, sports psychology, academic psychology.
- With further study, the Bachelor of Biomedicine can also lead to a career in:
- Biomedical engineering
  - Business and management
  - Commercialisation of inventions
  - Journalism
  - Law
  - Public service
  - Science communication
  - Teaching

## DEVELOP YOUR EMPLOYABILITY WHILE YOU STUDY

Whether you're exploring your employment options, crafting your resume and cover letter, or applying for an internship – Melbourne will help equip you with the services you need to develop your career.

Remember, employability skills are the non-technical skills needed to get a job. Often referred to as 'soft skills', they include communication, teamwork, problem solving, initiative, planning and organising, decision making and self-management.

Get one-on-one support, find a mentor or attend one of our seminars designed to help support your skill development and employability. And, don't forget to check out our internship opportunities and program for casual work.

Visit: [students.unimelb.edu.au/careers](https://students.unimelb.edu.au/careers)

## Peer mentors

The University of Melbourne's Peer Mentoring Program will give you the opportunity to connect with other students in the Bachelor of Biomedicine – and to get involved in campus life. Our Peer Mentors have walked your path – they have been through their first year in BBMED and have lots of tips to help you successfully transition to university.

Visit: [students.unimelb.edu.au/student-life/peer-mentor-program](https://students.unimelb.edu.au/student-life/peer-mentor-program)



### Dan Revesz

Third year BBMED, aspiring clinician-scientist

It was the Melbourne Biomedical Precinct that motivated Dan to move from Adelaide to Melbourne for university. "The number of hospitals, medical research institutes and biotechnology organisations is impressive," he says. "Receiving lectures from world-leading researchers and clinicians has made me realise how special this precinct is. Many of the labs and their research interests are the only one of their kind in Australia, and only one of a few in the world." Dan hopes to be selected into the Melbourne MD before completing his PhD.



### Lamisha Ahnaf

Second year BBMED, future nutritionist

Passionate about nutrition, Lamisha hopes to begin a Masters of Dietetics after completing her Bachelor of Biomedicine in 2022. Her undergraduate highlights so far have included the teaching staff, "I don't think I have had a lecturer or tutor that was not deeply passionate about what they were teaching." Of the famous Parkville campus, she says: "I love the University's campus and its location, the great coffee places nearby and being able to jump from one library to another for a study session with mates".



### Ryan Munnings

Third year BBMED, immunology researcher

With a keen interest in the body's immune system, it was his high school Biology teacher that inspired Ryan to pursue biomedical science. Ryan has had the opportunity to work at the Walter Eliza Hall Institute of Medical Research (WEHI) within the immunology division of his degree, which cemented this passion. "Surround yourself with supportive peers and excel together – and, fully engage with the exceptional teaching staff at the university," suggests the recipient of the Department of Microbiology and Immunology's 2nd Year Prize for top student (2019).



## Meet Rachel Moraes

First year BBMED student and Students@Work intern

With a passion for engineering and the applications of biotechnology, Rachel began her Bachelor of Biomedicine/Masters of Biomedical Engineering through the Graduate Degree Package (GDP) pathway in 2021.

After seeing a Students@Work post by the Melbourne University Biomedical Engineering Society (MUBES), she applied – hoping for an early opportunity to intern in the Department of Biomedical Engineering. The program provides on-campus employment opportunities such as paid internships and professional roles to current students.

"I now find myself as a biomedical engineering student improvement and project administration intern," says Rachel.

Working with Associate Professor Kathryn Stok's laboratory has given the 18-year-old an opportunity to "ask researchers and academics about their career journeys and learn how they have progressed through their studies to reach where they are today".

Rachel helps arrange servicing contracts for medical equipment and has built an understanding of the structures and procedures in the lab. She has also been involved with video editing, updating inventory records and checking supplies.

"I've met incredibly accomplished academics at all different stages in their career, and been able to experience a glimpse into biomedical engineering research at a much earlier stage in my degree than I could have hoped for."

Visit: [students.unimelb.edu.au/careers/find-a-job/work-on-campus](https://students.unimelb.edu.au/careers/find-a-job/work-on-campus)

## Scholarships

Melbourne has one of the most generous scholarship programs in Australia. Scholarships, prizes, bursaries and grants can propel you to new heights and help you explore new opportunities. With more than 1200 scholarships and prizes available for new and current students, it's more than likely there is one that you're eligible for – either when you start your course or during your studies.

Visit: [scholarships.unimelb.edu.au](https://scholarships.unimelb.edu.au)



Read more inspiring stories about our students and alumni. Visit:  
[biomedicalsciences.unimelb.edu.au/study/meetourtalent](https://biomedicalsciences.unimelb.edu.au/study/meetourtalent)

# Meet Our Talent

Meet some of our talented biomedicine students, world-class researchers and teaching talent – and find out where our incredible graduates are now.

## Where are they now?

From medicine to biomedical research, surgery, law and dentistry – the Bachelor of Biomedicine steers our graduates to every dream pathway.



**Elena Galiaboritch**

Bachelor of Biomedicine → Doctor of Medicine → Surgical training with the Urological Society of Australia and New Zealand

*“Carrying the Oceania flag in the Tokyo Olympic Games opening ceremony, and representing other COVID-19 healthcare workers, was an absolutely privilege. I look forward to balancing my two passions, the sport of shooting and surgery, in the years to come.”*



**Manuela Wicks**

Bachelor of Biomedicine → Masters of Physiotherapy → Physiotherapist → Mako Product Specialist, Stryker South Pacific

*“Wanting to help people and understand medical advancements have always been huge motivators in my life, this has influenced my studies and chosen career pathway.”*



**Roshine Linus**

Bachelor of Biomedicine (Pathology) → Doctor of Dental Surgery

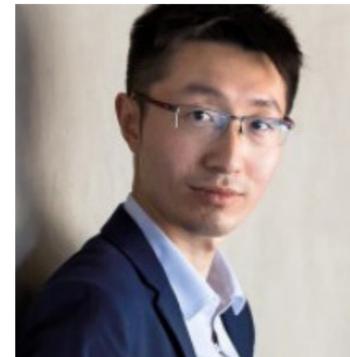
*“My studies have been incredibly rewarding, you get to help people who cannot afford dental care and treat patients as early as second year.”*



**Erin Crellin**

Bachelor of Biomedicine (Genetics) → Master of Biomedical Science → PhD at the Murdoch Children’s Research Institute

*“Melbourne is renowned for its academic, teaching and research excellence – and its support for students with disabilities was another reason I chose to study here.”*



**Ruo Bing Wu**

Bachelor of Biomedicine (Genetics/Genomics) → Doctor of Optometry → First-year Graduate Optometrist

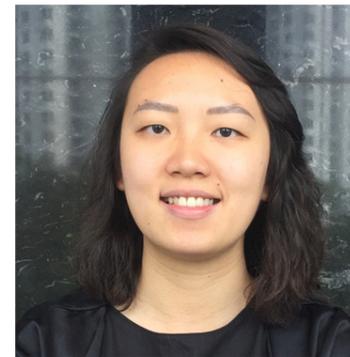
*“My undergraduate studies were intellectually engaging and stimulating - it was a fast paced, rich learning environment. I was surrounded by peers who were always eager to learn, share and help each other.”*



**Tal Maman**

Bachelor of Biomedicine → Juris Doctor → Graduate Lawyer, Ashurst

*“Biomedicine kept my mind open to the application of the sciences in the commercial and legal world – and instilled in me the skills and self-discipline necessary to excel in law school and in my professional life.”*



**Melina Winata**

Bachelor of Biomedicine → Co-Founder and CMO, Du’Anyam

*“Dream big. Start searching for your purpose in life, and enter through an internship in your dream company. I was so proud to be recognised by Forbes as one of the ‘30 under 30’ Social Entrepreneurs in Asia in 2019.”*

## World-leading researchers

Outstanding facilities and a commitment to discovery makes our School in demand among the brightest minds in biomedical research. Here are just a few of the leaders contributing to our world-changing research.



**Professor Erica Fletcher**

Associate Dean of Graduate Research, MDHS, Department of Anatomy and Physiology

*Prof Fletcher's esteemed career in ophthalmological research spans more than 15 years' and has led to multiple national and international awards. A central focus of her research has been the translation of her work to address clinically significant questions and to aid in the development of better treatments for retinal disease. She leads a team of 14 students and postdocs as Head of the Fletcher laboratory: Visual Neuroscience and has successfully supervised 17 PhD students through to completion. As Associate Dean (Graduate Research), Prof Fletcher also Chairs the Faculty Graduate Research Committee.*



**Associate Professor Quentin Fogg**

Associate Professor in Clinical Anatomy, Department Anatomy and Physiology

*A/Prof Fogg has more than 20 years' experience teaching head-to-toe anatomy in Australia, North America and the United Kingdom. In addition to teaching science, medical and allied health students, he has particular expertise in specialist anatomy education for active clinicians through the Melbourne Academy of Surgical Anatomy. This includes the highly successful Graduate Diploma in Surgical Anatomy. A/Prof Fogg leads a research group that explores the detailed anatomy of the limbs using dissection, digital modelling, medical imaging and histology. He co-authored A Companion Guide to Last's Anatomy and is 2021-2022 President of the Australian and New Zealand Association of Clinical Anatomists.*



**Professor Stephen Kent**

Professorial Fellow, Department of Microbiology and Immunology

*Prof Kent trained as an infectious diseases physician, immunologist and vaccine scientist in Australia and America. As a physician-scientist he is a national leader in developing and testing vaccines and is internationally recognised in this important field. His lab has developed exciting leads on analysing immune responses to COVID-19, HIV and Influenza that provide unique insights into the usefulness of various immune responses.*



**Dr Jeff Liddell**

Research Fellow, Department of Biochemistry and Pharmacology

*Dr Liddell investigates the underlying causes of neurodegenerative diseases and potential therapeutic strategies, with particular emphasis on the metallobiology of neurodegenerative diseases, glial biology and oxidative stress/inflammation. Methodology incorporates cell culture, animal models and analyses of human tissue. His research has led to translation of the drug copper-ATSM into current clinical trials in Australian motor neuron disease and Parkinson's disease patients. The mid-career neurobiologist's research was selected in the 13th edition of the NHMRC's top 10 list. The initiative highlights outstanding Australian research that is contributing to the prevention, diagnosis and treatment of health issues facing Australians.*



**Professor Laura Mackay**

Head of the Mackay Laboratory, Department of Microbiology and Immunology

*Award-winning biomedical scientist, Prof Mackay joined the School in 2009 and established her own research group at The Doherty Institute in 2016. Her research focusses on a population of T cells that resides in tissues of the body – termed tissue-resident memory T cells. The aim is to harness these cells for the development of new vaccines and immunotherapeutic strategies. Prof Mackay is also an undergraduate lecturer and presents her laboratory's research around the world. Among her many accolades, she was awarded the 2019 Frank Fenner Life Scientist of the Year Award in the Prime Minister's Prizes and was appointed the first female President of the Federation of Immunological Societies of Asia-Oceania.*



**Professor Stuart Ralph**

Head of the Stuart Ralph Laboratory, Department of Biochemistry and Pharmacology

*Prof Ralph is interested in parasitic diseases, with a primary focus on the causative agent of severe malaria, Plasmodium falciparum. The burden of disease-causing parasites is particularly high in developing countries. Complete genome sequences are available for many of these parasites, so a wealth of data is available from which to search for potential targets for chemotherapeutic interventions. Prof Ralph's interests lie in identifying and characterising promising drug targets from Plasmodium falciparum and other parasites, as well as studying the modes of action and mechanisms of resistance for existing drugs.*

Visit Meet Our Talent for more:

[biomedicalsciences.unimelb.edu.au/study/meetourtalent](https://biomedicalsciences.unimelb.edu.au/study/meetourtalent)

## Award-winning teachers

Internationally recognised academics and active researchers teach our students. These passionate academics ensure students are prepared not just for the workforce, but also for tackling the big health challenges of our time.



**Professor Sammy Bedoui PhD**  
School Director of Research and Professor in Microbiology and Immunology

*"I am passionate about basic research and I am looking forward to working with all colleagues in 2022 to ensure the School continues to be a place that fosters, promotes and celebrates world-class research in the biomedical sector."*



**Associate Professor Jason Ivanusic PhD**  
Head of Pain and Sensory Mechanisms, Department of Anatomy and Physiology

*"With biomedicine rapidly evolving there are so many new and enabling technologies that allow us to answer questions in ways that have not been possible in the past – and start asking new questions that we haven't been able to conceptualise before. It's an exciting time to be learning about biomedicine, and an exciting time to be contributing to biomedical research."*



**Dr Sarah Londrigan, PhD**  
Senior Lecturer Virology, Department of Microbiology and Immunology

*"After re-joining the Department in 2008, teaming up with Professors Andrew Brooks and Patrick Reading, I have expanded my research interests in virus-host interactions, focusing on influenza virus. My group's research program is working to understand the role of innate immunity in controlling influenza, in particular studying macrophages and their ability to restrict virus infection."*



**Rosa McCarty PhD GCUT**  
Senior Lecturer in Biochemistry and Pharmacology, Teaching Fellow in Stem Cells and Regenerative Medicine at the Centre for Stem Cell Systems

*"I am the co-ordinator of the Bachelor of Biomedicine third year capstone subject Frontiers in Biomedicine, an interdisciplinary subject that explores current and emerging health issues from individual and population perspectives. In my field, the importance of stem cell research has broadened from cellular therapies to a recognition of the utility of stem cells as tools to understand development, model disease, and develop and personalise therapeutics."*



**Associate Professor Terry Mulhern PhD**  
Director of Teaching and Learning in Biochemistry and Molecular Biology, Department of Biochemistry and Pharmacology

*"I'm excited by where structural biology is heading with techniques such as single particle cryo-electron microscopy and cryo-electron tomography, which are being set up at the Bio21 Institute. To be able to look inside cells and see molecular machines at near atomic resolution is incredible. I wish I was 21 again! I'd sign up for a PhD in this area in a heartbeat."*



**Dr Michelle Rank, PhD**  
Senior Lecturer in Topographical Anatomy, Department of Anatomy and Physiology

*"Receiving the prestigious 2021 MDHS Award for Learning and Teaching Achievement was an honour – as is teaching human anatomy to almost 1000 students each year, including undergraduate Biomedicine and graduate Medicine students. I have enjoyed designing novel digital resources, including 3D digitised anatomical specimens, and deploying these resources to enrich the multimodal learning experience."*



**Associate Professor Heather Verkade PhD**  
Teaching Specialist, 2nd year Molecular Biology, Department of Biochemistry and Pharmacology

*"I love the fundamental nature of the field of Molecular Biology, and teaching the absolute basis of life. We are trying to understand each individual's genomic makeup, their microbiome, their environmental history, and how all of these interact to influence their health outcomes. This is leading to personalised medicine, but the deeper we delve, the more detail we discover, and the more we need to develop the skills to interpret all this information."*

Visit Meet Our Talent for more:  
[biomedicalsciences.unimelb.edu.au/study/meetourtalent](https://biomedicalsciences.unimelb.edu.au/study/meetourtalent)

# Making news

Whether it's national media coverage about our research breakthroughs or sell-out events, here's a look at some of the happenings around the School in 2021.

## PURSUIT

### Published in Pursuit

School researchers shared their discoveries in the University's flagship publication, Pursuit. Including:

- New weapon against malaria's drug resistance - Prof Leann Tilley
- How immune cells could help diabetes and stroke - Prof Erica Fletcher
- Exercise really is medicine - Dr David Stroud and Dr Nikeisha Caruana
- Snakebites and human rights - Dr Andrew Watt
- What it takes to make a heartbeat - A/ Prof Kelly Smith

### New stem cell models for ageing and eye disease

Using stem cell modelling, researchers have developed genetic roadmaps for two of the world's leading causes of irreversible blindness. Professor Alice Pébay shares her laboratory's latest findings with Pursuit.



### Antibiotic resistance and the super bug crisis

In the final episode of an ABC three-part series, featuring leading scientists from around the globe called Invisible Wars, Professor Deborah Williamson discussed super bugs and the microbial threat to humans.

### Prof Stuart Mazzone talks coughing with ABC Radio

The internationally recognised respiratory expert discussed his research into nerve pathways that are important for coughing.



### Ethical issues in human embryos research shape new global guidelines

Professor Megan Munsie served on a global taskforce that developed a series of detailed recommendations in response to the International Society for Stem Cell Research (ISSCR) updated guidelines.



### Life beyond biomedicine

Almost 80 Bachelor of Biomedicine students met with alumni at the School's Careers Roundtable Breakfast to learn about the diverse pathways on offer in 2023, and beyond.



### Five things about type 2 diabetes

Professor Matt Watt shared his team's discovery of a key liver protein that reduces blood glucose levels. The finding could lead to more effective diabetes drugs. Search for it on Whooshkaa.

**pro tip!**  
HOW TO STOP YOUR GLASSES MISTING UP WHEN WEARING A FACE MASK  
1. Pinch the top of the mask over your nose & press it snugly against your cheekbones

**TikTok pro tip: How to stop your glasses fogging up when wearing a mask!**

### In the Lab with the Department of Anatomy & Physiology

Where will a career in Biomedical Sciences take you? It's broad, diverse and up to you! Go behind the scenes with some of the Department's brilliant minds in our five-part micro-documentary series.



### New Melbourne Academy of Surgical Anatomy

The School announced the academy where leading surgeons develop positive impact and improve patient outcomes through specialised training, research and commercialisation.



### What happens to immunity levels post COVID-19 infection?

Dr Jennifer Juno contributed to research that suggests protective COVID-19 vaccines should generate stronger antibody responses than natural infection.



### How stress can stop immune cells in their tracks

Associate Professor Scott Mueller leads research that discovered signals produced by nerves in response to stress can stop immune cells from effectively fighting pathogens or tumours.

To stay up to date with the School's latest research, news and events visit [biomedicalsciences.unimelb.edu.au](https://biomedicalsciences.unimelb.edu.au)

## School Of Biomedical Sciences

+61 3 8344 5820

Biomedsci-reception@unimelb.edu.au

Level 2 West Wing  
Medical Building 181  
The University of Melbourne Parkville  
Victoria 3010 Australia

Produced by the School of Biomedical Sciences, Marketing,  
Communications and Events May 2022 (updated Oct 2022)  
Written by Harriet Edmund

## Connect with us

Facebook.com/MDHS.UniMelb

Twitter.com/UniMelbMDHS

Youtube.com/user/UniMelbMDHS

#UnimelbSBS

## Contact us

For information on our courses and entry requirements,  
contact Stop 1

Submit an enquiry online at [ask.unimelb.edu.au](http://ask.unimelb.edu.au)

Call 13 MELB (13 6352) + 61 3 9035 5511

Visit us at Stop 1 (Parkville):  
757 Swanston Street  
The University of Melbourne  
Victoria 3010 Australia

## Faculty of Medicine, Dentistry and Health Sciences Intellectual property

Copyright in this publication is owned by the University and no part of it may be reproduced without the permission of the University. For further information, refer to: [unimelb.edu.au/governance/statutes](http://unimelb.edu.au/governance/statutes)

## Statement on Privacy Policy

When dealing with personal or health information about individuals, the University of Melbourne is obliged to comply with the Information Privacy Act 2000 and the Health Records Act 2001.

For further information, refer to: [unimelb.edu.au/governance/compliance/privacy](http://unimelb.edu.au/governance/compliance/privacy)

## Disclaimer

The University endeavours to ensure that information contained in this publication is current and correct at the time of publishing. However, the University may change details relating to its courses from time to time (such as subjects offered, fees or academic staff). You should not rely on this publication to make any decision about making or accepting any application to study at the University. Before doing so, you should contact the School or Faculty directly to ensure that the relevant information is current and correct.

This does not affect any rights you may have under the Australian Consumer Law.

CRICOS Provider Code 00116K