



POSITION DESCRIPTION

Melbourne Veterinary School
Faculty of Science

Postdoctoral Research Fellow (Mathematical Modelling)

POSITION NO	0060591
CLASSIFICATION	Research Fellow, Level A
SALARY	\$80,258 - \$108,906 (pro rata for part-time)
SUPERANNUATION	Employer contribution of 17%
WORKING HOURS	Part-time (0.8 FTE)
BASIS OF EMPLOYMENT	Continuing (Research Contingent)
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	Online applications are preferred. Go to http://about.unimelb.edu.au/careers , select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	Associate Professor Peta Hitchens Tel +61 488 776 792 Email peta.hitchens@unimelb.edu.au <i>Please do not send your application to this contact</i>

For information about working for the University of Melbourne, visit our website:
about.unimelb.edu.au/careers

Acknowledgement of Country

The University of Melbourne acknowledges the Traditional Owners of the unceded land on which we work, learn and live: the Wurundjeri Woi Wurrung and Bunurong peoples (Burnley, Fishermans Bend, Parkville, Southbank and Werribee campuses), the Yorta Yorta Nation (Dookie and Shepparton campuses), and the Dja Dja Wurrung people (Creswick campus).

The University also acknowledges and is grateful to the Traditional Owners, Elders and Knowledge Holders of all Indigenous nations and clans who have been instrumental in our reconciliation journey.

We recognise the unique place held by Aboriginal and Torres Strait Islander peoples as the original owners and custodians of the lands and waterways across the Australian continent, with histories of continuous connection dating back more than 60,000 years. We also acknowledge their enduring cultural practices of caring for Country.

We pay respect to Elders past, present and future, and acknowledge the importance of Indigenous knowledge in the Academy. As a community of researchers, teachers, professional staff and students we are privileged to work and learn every day with Indigenous colleagues and partners.

Position Summary

This is an exciting position for a Postdoctoral Research Fellow to join a collaborative project in mathematical modelling of equine bone injury between the Equine Orthopaedic Research Group at the Melbourne Veterinary School and the School of Mathematics and Statistics at the University of Melbourne, Australia.

The role focuses on developing mathematical models of subchondral bone adaptation, resorption, and microdamage accumulation of the third metacarpal lateral condyles from Thoroughbred racehorses. The goal is to produce an ethical, biological and causal understanding of the development of bone microdamage leading to fracture in racehorses.

The Postdoctoral Research Fellow will be required to independently plan and carry out research on the nominated research project and work towards completion of the aims of the project; perform mathematical modelling and data analysis; work with initiative, maturity, and discretion; and contribute to research training, scientific mentoring and supervision of student research projects. This role is part of a larger research group working in collaboration with the horse racing industry to improve safety and welfare outcomes, both nationally and internationally.

The position will be located at both the University of Melbourne's Werribee and Parkville campus', with some flexibility.

1. Key Responsibilities

Under general direction, guidance, and support from the senior academic researchers of the research program, the Postdoctoral Research Fellow is expected to:

- ▶ Independently plan and carry out research on the nominated research project and work towards completion of the aims of the project;
- ▶ Develop effective timelines and milestones based on goals of the research programme;
- ▶ Perform mathematical modelling and statistical analysis of research data;
- ▶ Participate in preparation of manuscripts for publication in peer-reviewed journals;

- ▶ Liaise effectively with collaborators and with a variety of internal and external stakeholders;
- ▶ Contribute to the development of the Department's and the School's strong research program;
- ▶ Actively participate in research seminars and conferences to disseminate research findings as opportunities arise.
- ▶ Contribute to research training, scientific mentoring and supervision of student research projects.
- ▶ Attend and actively participate in departmental seminars, meetings and/or committee memberships.

2. Selection Criteria

2.1 ESSENTIAL

- ▶ A PhD (or near completion of a PhD) in mathematical modelling, mathematical biology, applied mathematics or a related discipline;
- ▶ Strong quantitative skills and experience in mathematical modelling of biological processes with ODEs, simulations and/or analysis in R/Matlab, problem solving and maintaining accurate research records;
- ▶ Ability to perform independent research, be flexible, self-motivated, and ability to prioritise tasks to achieve project objectives within timelines;
- ▶ A record of quality research as evidenced by publications in leading journals and at conferences commensurate with opportunity;
- ▶ Demonstrated capacity to communicate research concepts to technical and nontechnical audiences demonstrated by presentation of research results at conferences, internal forums;
- ▶ Excellent ability to work co-operatively and positively in a multi-disciplinary research-based team environment and liaise with people from diverse backgrounds;
- ▶ Excellent interpersonal skills, including an ability to interact with internal and external stakeholders (academic, administrative and support staff) in a courteous and effective manner.

2.2 DESIRABLE

- ▶ Demonstrated ability to engage with relevant professional and equine or racing industry bodies and stakeholders to foster collaborative partnerships;
- ▶ Experience in supervision of students and/or research assistants;
- ▶ Experience in the completion of ethics applications and submission of grant applications.

2.3 OTHER JOB RELATED INFORMATION

- ▶ This position requires the incumbent to hold a current and valid Working with Children Check.

3. Equal Opportunity, Diversity and Inclusion

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University makes decisions on employment, promotion, and reward on the basis of merit.

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the Advancing Melbourne strategy that addresses diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment. Consequently, the People Strategy sets out the strategic aim to drive diversity and inclusion across the University to create an environment where the compounding benefits of a diverse workforce are recognised as vital in our continuous desire to strive for excellence and reach the targets of Advancing Melbourne.

4. Occupational Health and Safety (OHS)

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at:

<https://safety.unimelb.edu.au/people/community/responsibilities-of-personnel>

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. Other Information

5.1 MELBOURNE VETERINARY SCHOOL

The Melbourne Veterinary School is Australia's number 1 ranked veterinary school with a proud tradition of excellence in research, education, and leadership. The Melbourne Veterinary School has research strengths in animal diseases, zoonotic infectious diseases, production animal systems (including dairy and red meat) and animal welfare. The Melbourne Veterinary School provides the only professional entry veterinary medicine program in Victoria and covers a wide variety of undergraduate and postgraduate subjects across veterinary science with Australia's premiere graduate Doctor of Veterinary Medicine program, which is nationally and internationally accredited by VSAAC, RCVS and the AVMA COE.

In January 2023, Greencross Pet Wellness Company opened the Greencross Veterinary Hospital at the Werribee campus, providing 24-hour specialist and emergency care for

patients, along with clinical rotations for the University's Doctor of Veterinary Medicine students.

The School is a central component of the Faculty of Sciences which has an outstanding international reputation for excellence and innovation in research, curriculum development and for links within industry, policy makers, other research institutes and the wider community - <https://mvs.unimelb.edu.au/>

The Equine Orthopaedic Research Group in the Melbourne Veterinary School conducts research aimed at the prevention of musculoskeletal injury in athletic horses.

We are a multidisciplinary research group using detailed investigation of bone microstructure, bone biomechanical properties, computational modelling of limb loads and epidemiological studies of injury to investigate the causes of bone and joint injury in horses and to develop preventative strategies that can be implemented by the equine industry - <https://equinecentre.unimelb.edu.au/>

5.2 FACULTY OF SCIENCE

<http://www.science.unimelb.edu.au>

Science at Melbourne is a global leader across fundamental and impactful scientific research and education. Science begins with curiosity, and we are dedicated to understanding the universe from the level of sub-atomic particles to the solar system. We aim to be leaders who positively impact the community locally and globally, addressing major societal issues from climate change to disease. Our discoveries help build an understanding of the world around us.

Our strength is our breadth of expertise. We are the second largest faculty in the University comprising seven schools: Agriculture, Food & Ecosystem Sciences, BioSciences, Chemistry, Geography, Earth & Atmospheric Sciences, Mathematics & Statistics, Physics and Veterinary Science.

This depth of knowledge positions the faculty to better understand, explore and impact our world and humanity, within a truly comprehensive Faculty of Science.

We have more than 150 years of experience in pioneering scientific thinking and analysis, leading to outstanding teaching and learning and offer a curriculum based on highly relevant research. We aim to train students with the knowledge and intellectual flexibility to drive the industries of tomorrow and lead across all levels of society.

We offer a range of undergraduate, honours, graduate and research degrees, enrolling more than 11,500 undergraduate and 3,750 graduate students.

We are dedicated to delivering leading transformative educational outcomes, underpinned by research, and an inclusive and inspiring student experience.

Excellence comes in many forms and diversity of thought, perspective and disciplines is essential to deliver globally leading science. At the core of our success is our focus on an inclusive environment for all in our community. Our Faculty's focus on equity, inclusion and belonging is grounded in our endeavour to ensure we are best placed to advance research, teaching and serve diverse national and global communities.

As a Science community we sit across five of the University's campuses – Parkville, Dookie, Burnley, Creswick and Werribee. This reach provides us with a unique perspective that is beneficial to our teaching and research. It also means we can offer our students a greater variety of learning experiences and internships to engage with industry partners to solve real-world issues.

The Faculty is custodian of the Bio21 Molecular Science and Biotechnology Institute, Melbourne Energy Institute, Melbourne Biodiversity Institute, Office for Environmental Programs, Australian Mathematical Sciences Institute (AMSI) and the Indigenous Knowledge Institute and home to numerous Centres.

5.3 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The main campus in Parkville is recognised as the hub of Australia's premier knowledge precinct comprising eight hospitals, many leading research institutes and a wide-range of knowledge-based industries. With outstanding performance in international rankings, the University is at the forefront of higher education in the Asia-Pacific region and the world.

The University employs people of outstanding calibre and offers a unique environment where staff are valued and rewarded.

Further information about working at The University of Melbourne is available at <http://about.unimelb.edu.au/careers>

5.4 ADVANCING MELBOURNE

The University's strategic direction is grounded in its purpose. While its expression may change, our purpose is enduring: to benefit society through the transformative impact of education and research. Together, the vision and purpose inform the focus and scale of our aspirations for the coming decade.

Advancing Melbourne reflects the University's commitment to its people, its place, and its partners. Our aspiration for 2030 is to be known as a world-leading and globally connected Australian university, with our students at the heart of everything we do.

- ▶ We will offer students a distinctive and outstanding education and experience, preparing them for success as leaders, change agents and global citizens.
- ▶ We will be recognised locally and globally for our leadership on matters of national and global importance, through outstanding research and scholarship and a commitment to collaboration.
- ▶ We will be empowered by our sense of place and connections with communities. We will take opportunities to advance both the University and the City of Melbourne in close collaboration and synergy.
- ▶ We will deliver this through building a brilliant, diverse and vibrant University community, with strong connections to those we serve.

The means for achieving these goals include the development of the University of Melbourne's academic and professional staff and the capabilities needed to support a modern, world-class university. Those means require a commitment to ongoing financial sustainability and an ambitious infrastructure program which will reshape the campus and our contribution to the communities we engage with. This strategy, and the priorities proposed, is centred around five intersecting themes; place, community, education, discovery and global.

5.5 GOVERNANCE

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University.

Comprehensive information about the University of Melbourne and its governance structure is available at <https://about.unimelb.edu.au/strategy/governance>