



POSITION DESCRIPTION

School of Mathematics and Statistics
Faculty of Science

OPTIMA POSTDOCTORAL RESEARCH FELLOW

POSITION NO	0053800
CLASSIFICATION	Level A / Level B Level of appointment is subject to qualification and experience.
SALARY	Level A: \$77,171 – \$104,717 p.a. (PhD entry level \$95,179) Level B: \$110,236 – \$130,900 p.a. Salary pro-rata for part-time.
SUPERANNUATION	Employer contribution of 17%
WORKING HOURS	Full-Time (1.0 FTE) The University of Melbourne is strongly committed to supporting diversity and flexibility in the workplace. Applications for part-time or other flexible working arrangements will be welcomed and will be fully considered subject to meeting the inherent requirements of the position.
BASIS OF EMPLOYMENT	Fixed term for 3 years.
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits Equity, diversity and inclusion are at the heart of the OPTIMA experience. We strive to create a fair and inclusive culture.
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	Professor Kate Smith-Miles Email: smith-miles@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 country throughout Australia. The University recognises the unique place held by Aboriginal and Torres Strait Islander peoples as the original custodians of country and their continued connection to the land, waterways, songlines and culture. The University respects all Aboriginal and Torres Strait Islander People and warmly embrace those students, staff, Elders and collaborators who identify as First Nations

Position Summary

This Research Fellow, as a key appointee in a newly established ARC Training Centre in Optimisation Technologies, Integrated Methodologies and Applications (**OPTIMA**), is expected to conduct world-class research and provide training for research students working in industrial optimisation. The research program involves a focus on model-based and black-box optimisation methodologies of relevance to a broad range of industry partner optimisation challenges. A multidisciplinary approach is expected, drawing from techniques developed in mathematics, computer science, statistics, engineering, and economics.

The successful incumbent will be responsible for advancing optimisation methodologies, developing open-source software tools, co-supervising Masters and PhD students, collaborating with industry partners, and communicating and disseminating the research results that are not commercial-in-confidence.

This role is based in the Centre physically located at Melbourne Connect in Carlton, along with the Centre Director, and will be a member of the School of Mathematics and Statistics at the University of Melbourne. This position reports directly to the Centre Director and is expected to work closely with OPTIMA's Chief Investigators, research students, postdoctoral research fellows, the OPTIMA Manager, as well as academic and professional staff from both OPTIMA locations and industry partners at their locations. The incumbent is part of a team of 4 postdocs and a software developer supporting OPTIMA's mission. This is a research-only position but will also involve joint supervision of postgraduate, coursework masters and honours students. Some teaching opportunities may also be available if the candidate is interested in developing their teaching skills, but the role is primarily focused on research.

1. Key Responsibilities

The position description should be read alongside [Academic Career Benchmarks and Indicators](#).

A level A academic is acquiring skills and building academic achievements (oriented towards the benchmarks).

A level B academic has well developed academic skills and strong academic performance (approaching or progressing towards the benchmarks).

1.1. RESEARCH AND RESEARCH TRAINING

- You are expected to significantly contribute towards the research effort of the team and to develop your research expertise with an increasing degree of autonomy.
- Under the guidance and support of Senior Academic staff, conduct internationally competitive research in optimisation, either as a member of a team or independently, resulting in publications in high-quality journals and conferences, and other scholarly outputs to a high academic standard,
- Actively participate in research seminars and conferences to disseminate research findings as opportunities arise,
- Contribute to the preparation or, where appropriate, individual preparation of research proposal submissions to external funding bodies,
- Co-supervise or, where appropriate, supervise honours, coursework masters or postgraduate research students, and research support staff within the field of the staff member's area of research,
- Undertake administrative functions and obligations primarily connected with the staff member's area of research,
- Attend meetings associated with OPTIMA, the School of Mathematics and Statistics and Faculty of Science, and membership of a limited number of committees, if/where appropriate,
- With the support of a software engineer, participate in the development of software implementations,

1.2. ENGAGEMENT

- Present research to the public to increase public awareness of educational and scientific developments.
- Actively participate in outreach activities.
- Engage with relevant professional and industry bodies and stakeholders to foster collaborative partnerships.
- Participate in professional activities, including attendance at conferences and seminars in the field of expertise,
- Support the delivery of outcomes to industry partners.

1.3. LEADERSHIP AND SERVICE

- Actively participate at OPTIMA and School meetings and, with guidance, contribute to planning activities or committee work to support capacity building in OPTIMA,
- Participate in or present research in outreach activities to raise public awareness of educational and scientific developments,
- Effectively demonstrate and promote OPTIMA and University values, including diversity and inclusion and high standards of ethics and integrity,
- Actively contribute to School activities such as Open day to promote student engagement.

1.4. OTHER DUTIES

- Perform other tasks as requested by the OPTIMA Director or the Head of School,
- Actively participate in the University Professional Development Framework,

- Ensure an up-to-date record of University compliance courses, such as but not limited to Appropriate Workplace Behaviour, PDF for Staff and Supervisors, OH&S training courses,
- Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in section 4.

2. Selection Criteria

2.1. ESSENTIAL

- Completion of a PhD in a field of applied mathematics, statistics, computer science or engineering or related discipline,
- Demonstrated capacity to engage in outstanding research in optimisation, consistent with the strengths and strategic directions of OPTIMA, with a strong publication track record of original research publications in peer-reviewed international journals, relative to time since PhD completion,
- Experience in at least one of the following topics: operations research, constraint programming, evolutionary computation, computational optimisation, machine learning, and/or stochastic optimisation,
- Capacity to supervise, develop and motivate postgraduate and honours research students,
- Potential to earn income through nationally competitive external research granting bodies,
- Demonstrated capacity to work constructively and collaboratively with colleagues in furthering the aims of OPTIMA, and an ability to work in multidisciplinary research or teaching teams,
- Demonstrated oral and written communication skills and an ability to represent OPTIMA, the School, and the discipline with internal or external groups.
- Significant experience with programming computational algorithms.

ADDITIONAL ESSENTIAL CRITERIA FOR APPOINTMENT AT LEVEL B AND DESIRABLE FOR LEVEL A

- A demonstrated aptitude for independent research, with a strong publication record in relevant areas commensurate with experience and opportunities.
- Demonstrated ability to engage with relevant professional and industry bodies and stakeholders to foster collaborative partnerships.
- Demonstrated excellent organisational skills to meet deadlines and bring projects to a timely completion
- Demonstrated ability to develop, administer and see through to completion appropriately designed research projects with limited supervision

2.2. DESIRABLE (BOTH LEVELS)

- Industry experience solving optimisation problems to support decision making,
- A track record of external funding through grant applications and/or support in funded joint projects with others internal or external to the University,
- Experience in assisting with supervision of students undertaking undergraduate or higher degree research projects.

2.3. OTHER JOB-RELATED INFORMATION

- Occasional work out of ordinary hours, travel, etc.,
- Travel between nodes of OPTIMA at University of Melbourne and Monash University,
- Travel to industry partner locations.

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 Advancing Melbourne policies that address 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. SCHOOL OF MATHEMATICS AND STATISTICS

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

The University of Melbourne's School of Mathematics and Statistics is one of Australia's leading mathematics and statistics schools. It has achieved this status through the high quality of its research and teaching programs. The School offers a wide range of subjects

to undergraduate and postgraduate students and is involved in aspects of community life that impact on the interests of the School and the discipline.

The School of Mathematics and Statistics has a total of 70 continuing teaching and/or research staff; 34 research only staff and consultants; 16 academic specialists and 16 support staff. The School has over 240 casual and honorary staff. In 2020, there were 90 Research Higher Degree and 278 Coursework Master of Science students. Five members of the School staff and one Emeritus Professor are members of the Academy of Science.

Infrastructure support for research and basic information technology facilities are provided to all members of the department. Special facilities such as high-end workstations and salaries for research fellows are supported through individual competitive external research grants. Members of the School have had considerable success at attracting support from the Australian Research Council. The school currently hosts two ARC Centres of Excellence, and has hosted four ARC Laureate Fellows, ten ARC Future Fellows and fourteen DECRA Fellows.

It is one of the objectives of the University to develop and maintain a strong international profile. In this context, members of the School have strong collaborative links with colleagues in the United States of America, most countries in Europe and the Asia-Pacific region.

5.2. FACULTY OF SCIENCE

<https://science.unimelb.edu.au>

Science at the University of Melbourne is among the most highly ranked Faculties of Science in Australia*. Science is defined by its research excellence in the physical and life sciences and is at the forefront of research addressing major societal issues from climate change to disease. Our discoveries help build an understanding of the world around us.

We have over 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, which empowers our STEM students and graduates to understand and address complexities that impact real world issues and the challenges of tomorrow.

We aspire to engage the broader community with the impact that Science has on our everyday lives. Through the strength of our internships and research project offerings, our students are provided opportunities to engage with industry partners to solve real-world issues.

The Faculty of Science has over 53,000 alumni and is one of the largest faculties in the University comprising seven schools: BioSciences, Chemistry, Earth Sciences, Ecosystem and Forest Sciences, Geography, Mathematics and Statistics, and Physics.

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

Science manages more than \$315 million of income per annum, with a staff base in the order of 290 professional staff, and more than 630 academic staff.

We offer a range of undergraduate, honours, graduate and research degrees, enrolling over 9,700 undergraduate and 2,400 graduate students. The Faculty of Science is the custodial Faculty for the BSc (Bachelor of Science). The Faculty of Science is a leader in research, contributing approximately \$80 million in HERDC income per annum. The Faculty of Science is highly research focused, performing strongly in the ARC competitive grants

schemes, often outperforming the national average. The Faculty of Science is currently growing its competitiveness and standing in the NHMRC space.

The Faculty of Science provides community services and industry partnerships based on a solid foundation of research in the pure and applied sciences. The Faculty has an endowment of approximately \$100 million. The annual income from the endowment supports more than 140 prizes, scholarships and research awards, and numerous academic positions.

*Based on 2018-19 subject rankings by QS and Time Higher Education

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>