POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

**School of Mathematics and Statistics**

Faculty of Science

# RESEARCH FELLOW IN STATISTICAL GENOMICS

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| **POSITION NO** | 0051936 |
| **CLASSIFICATION** | Level A |
| **SALARY** | $73,669 - $99,964 p.a (PhD entry level $93,130) (pro rata for part-time) |
| **SUPERANNUATION** | Employer contribution of 17% |
| **WORKING HOURS** | Full-Time |
| **BASIS OF EMPLOYMENT** | Fixed-Term for three years |
| **OTHER BENEFITS** | http://about.unimelb.edu.au/careers/working/benefits |
| **HOW TO APPLY** | Online applications are preferred. Go to http://about.unimelb.edu.au/careers, select the relevant option ('Current Staff' or 'Prospective Staff'), then find the position by title or number. |
| **CONTACT FOR ENQUIRIES ONLY** | Prof David Balding or Dr Yao-ban Chan<br>Tel +61 3 8344 3730<br>Email dbalding@unimelb.edu.au or yaoban@unimelb.edu.au<br>*Please do not send your application to this contact* |

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

We are seeking a qualified and enthusiastic Research Fellow to participate in cutting-edge research in statistical genetics/genomics. The successful incumbent will be based at Melbourne Integrative Genomics (MIG), working with Professor David Balding and Dr Yao-ban Chan to develop and apply new models and methods for making demographic and evolutionary inferences from large, genome-wide datasets.

This will involve the use of new, efficient data structures to improve inferences about the demographic history of populations, multi-species evolutionary history, and phylogenetic networks. This position requires strong statistical and programming skills, and an appreciation of the challenges of working with real genomic datasets. The Melbourne team will collaborate with Dr Jerome Kelleher at the University of Oxford Big Data Institute, and there is also a wealth of other collaboration opportunities within MIG, the School of Mathematics and Statistics and the Parkville biomedical precinct. International travel to visit conferences and/or collaborators will be available, subject to satisfactory progress and prevailing travel restrictions.

# 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).

## 1.1 RESEARCH AND RESEARCH TRAINING

You are expected to 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, resulting in publications in high impact journals
- Contribute to and publish academic papers and other scholarly outputs to a high academic standard in accordance with the research expectations of the University of Melbourne
- Actively participate in research seminars and conferences to disseminate research findings as opportunities arise
- Contribute to the preparation of research proposal submissions to internal or external funding bodies as relevant.
- Undertake administrative functions and obligations primarily connected with the staff member's area of research
- Contribute to, and assist in the co-supervision and training of research students primarily at undergraduate level
- Engage with relevant professional and industry bodies and stakeholders to foster collaborative partnerships

## 1.2 TEACHING AND LEARNING

- Contribute to teaching, training, scientific mentoring and supervision of students

## 1.3 LEADERSHIP AND SERVICE

- Actively participate at School meetings and with guidance, contribute to planning activities or committee work to support capacity building in the School/discipline.
- Contribute to public research presentations to increase public awareness of scientific developments, and promote critical enquiry and public debate within the community where appropriate
- Effective demonstration and promotion of University values including diversity and inclusion and high standards of ethics and integrity

### 1.4 OTHER DUTIES

- Perform other tasks as requested by the supervisor or the Head of School
- 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 (or near completion) of a PhD in statistics, computational/quantitative biology, computer science, mathematics or other field with a strong statistical and computational component.
- Strong computing skills including programming in a scientific and/or statistical language (e.g. R, C/C++, Python)
- Knowledge of relevant statistical techniques, and experience of statistical analysis of large datasets.
- Research achievements commensurate with experience and opportunities.
- Ability to prepare research reports and manuscripts for publication
- Excellent interpersonal and both written and oral communication skills in English.
- Excellent ability to work co-operatively and positively in a multi-disciplinary research-based team environment and liaise with people from diverse backgrounds.
- Excellent organisational skills to meet deadlines and bring projects to a timely completion

### 2.2 DESIRABLE

- Experience with accessing and using large-scale public genomic databases.
- Knowledge of the basic vocabulary of genetics, the key processes that lead from genotype to phenotype, and the principles of population genetics.

### 2.3 OTHER JOB-RELATED INFORMATION

- Occasional work out of ordinary hours including for calls with international collaborators.

## 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 University's People Strategy 2015-2020 and 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 deserve to service for excellence and reach the targets of Growing Esteem.

## 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:

http://safety.unimelb.edu.au/topics/responsibilities/

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

Dr Chan holds an appointment in the School of Mathematics & Statistics while Professor Balding holds joint appointments between that School and the School of BioSciences. They are members of Melbourne Integrative Genomics (MIG) which is hosted by both Schools. The successful incumbent will be a member of both MIG and the School of Mathematics & Statistics.

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 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 out-performing the national average. The Faculty of Science is currently growing its competitiveness and standing in the NHMRC space.

**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 http://www.unimelb.edu.au/governance