POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

School of Mathematics and Statistics
Faculty of Science

Research Fellow in Geometric Topology

POSITION NO	0049441
CLASSIFICATION	Level A
SALARY	$72,083 - $97,812 p.a. (PhD entry level $91,125)
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-Time
BASIS OF EMPLOYMENT	Fixed-Term for 2 years
OTHER BENEFITS	http://about.unimelb.edu.au/careers/working/benefits
HOW TO APPLY	Online applications are essential. Go to https://www.mathjobs.org/jobs, Login or Create a New Account, then find the position by title.
CONTACT FOR ENQUIRIES ONLY	Associate Professor Craig Hodgson Tel +61 3 8344 5553 Email craigdh@unimelb.edu.au *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

Position Summary

This postdoctoral position is associated with the ARC Discovery Project “classical and quantum invariants of low-dimensional manifolds” with Chief investigators Associate Professor Craig Hodgson and Professor Hyam Rubinstein. The successful applicant will participate in all aspects of the project, including the presentation of research results at seminars and conferences, and will, as part of the research team, write scholarly papers for publication in academic journals. The ideal candidate will bring in expertise in geometric topology, hyperbolic geometry and quantum topology, complementing that of Hodgson and Rubinstein.

The research project aims to relate quantum invariants arising from physics, including the Jones polynomial and the 3D-index, to classical topology and geometry, including surfaces in 3-manifolds and Thurston's hyperbolic structures on 3-manifolds.

1. Key Responsibilities

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, 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, or where appropriate individual 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.

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.
- Effective demonstration and promotion of 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 supervisor 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 (or near completion) of a PhD in Mathematics. It is expected that the applicant will have completed a PhD by the date of commencement.
- A demonstrated aptitude for research, with a sound publication record in relevant areas, commensurate with experience and opportunities.
- Demonstrated ability to prepare research reports and manuscripts for publication.
- Strong evidence of ability and desire to build an academic research career trajectory
- Excellent interpersonal and both written and oral communication skills in English.
- Excellent ability to work co-operatively and positively in a research-based team environment and liaise with people from diverse backgrounds.
- 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

- Expertise in areas of geometric topology, hyperbolic geometry and quantum topology related to the project.
- The ability to initiate new research ideas and directions.
- The ability to attract 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.

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

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; 53 research only staff and consultants; 16 academic specialists and 15 support staff. The School has over 120 casual and honorary staff. In 2018, there were 93 Research Higher Degree and 245 Coursework Master of Science students. Two members of the School staff and four Emeritus Professors are Fellows 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 three ARC Laureate Fellows, nine ARC Future Fellows and twelve 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 GROWING ESTEEM, THE MELBOURNE CURRICULUM AND RESEARCH AT MELBOURNE: ENSURING EXCELLENCE AND IMPACT TO 2025

Growing Esteem describes Melbourne's strategy to achieve its aspiration to be a public-spirited and internationally-engaged institution, highly regarded for making distinctive contributions to society in research and research training, learning and teaching, and engagement. http://about.unimelb.edu.au/strategy-and-leadership

The University is at the forefront of Australia's changing higher education system and offers a distinctive model of education known collectively as the Melbourne Curriculum. The new educational model, designed for an outstanding experience for all students, is based on six broad undergraduate programs followed by a graduate professional degree, research higher degree or entry directly into employment. The emphasis on academic breadth as well as disciplinary depth in the new degrees ensures that graduates will have the capacity to succeed in a world where knowledge boundaries are shifting and reforming to create new frontiers and challenges. In moving to the new model, the University is also aligning itself with the best of emerging European and Asian practice and well-established North American traditions.

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