



Professor of Applied Mathematics (Mathematical Biology or Computational Mathematics)

Department/Unit	School of Mathematical Sciences
Faculty/Division	Faculty of Science
Classification	Level E
Work location	Clayton campus
Date document created or updated	May 2018

Organisational Context

Monash is a university of transformation, progress and optimism. Our people are our most valued asset, with our academics among the best in the world and our professional staff revolutionising the way we operate as an organisation. For more information about our University and our exciting future, please visit www.monash.edu.

The five Schools of the **Faculty of Science** offer a large and diverse range of disciplines in undergraduate and postgraduate courses. Ten Schools from other university faculties contribute to science teaching at all levels, allowing students to choose their studies from physical, biological, biomedical, behavioural, environmental, mathematical and computer sciences. The Faculty of Science has a strong research reputation. The faculty's research spans the theoretical to the applied, contributes to new knowledge and technologies, and challenges how we interact with the world. To learn more about the Faculty of Science, please visit our website: www.monash.edu/science/.

The **School of Mathematical Sciences** is one of the largest of the five Schools in the Faculty, and has close working collaborations with other Schools/Departments such as Physics and Astronomy, Earth, Atmosphere, Environment, Computer Science; and other faculties such as Business and Economics, Arts, Medicine, IT and Engineering. The School has strong links with outside institutions such as CSIRO, the Defence Science and Technology Organisation, and the National Australia Bank and a large number of research institutes and universities around the world.

The School provides undergraduate teaching for students in the Faculties of Science, Engineering, Information Technology and Pharmacy and Pharmaceutical Sciences, as well as postgraduate training in its key areas of research. The School is multidisciplinary with very active groups in algebra and discrete mathematics, analysis and geometry, applied mathematics, fluid dynamics, statistics and stochastic processes, numerical analysis and scientific computing, operations research, and mathematical biology.

Position Purpose

A Professor is expected to exercise a special responsibility in providing leadership and in fostering excellence in research, teaching, professional activities and policy development in the academic discipline within the department or other comparable organisational unit, within the university and within the community, both scholarly and general.

The School of Mathematical Science is a research leader with a strong international reputation in Pure Mathematics, Statistics, Mathematical Finance, and Applied and Computational Mathematics.

The two areas of specific interest for this position are Mathematical Biology and Computational Mathematics. The Professor in Applied Mathematics is expected to take a leadership role in guiding and encouraging growth in these areas, while fostering an interest in either the areas of Mathematical Biology and Medicine, including research that involves collaborations with biologists or medical researchers, or in Computational Mathematics including numerical PDEs, numerical linear algebra, uncertainty quantification, high performance computing, computational fluid dynamics, optimisation, optimal control, and operations research.

The Professor of Applied Mathematics will be expected to have outstanding research records and help drive for excellence across the School. We are interested in excellent researchers who apply mathematics to problems in science, engineering, biology and technology. The Professor will have a PhD in mathematics or a related area, an exceptional track record in high-quality research, and a strong commitment to teaching and the supervision of research students. The Professor will be expected to take a leadership role within the department.

Reporting Line: The position reports to Prof Philip Hall, Head of School

Supervisory Responsibilities: Not applicable

Financial Delegation: Not applicable

Budget Responsibilities: Not applicable

Key Responsibilities

1. Actively engage in high-quality, internationally recognised research in line with the Faculty's research strategy, by maintaining a substantial active publications record (high-quality refereed journals) and supervising and mentoring early career researchers and research students
2. Foster research excellence through procuring competitive research grants, leading significant research projects and working with other staff to develop research links
3. Provide strong and committed leadership in teaching, curriculum development and research training by participating in the faculty's curriculum planning and development processes, academic committees, and relevant examination processes in addition to monitoring the quality of individual teaching in the relevant discipline
4. Provide innovative and effective leadership for the expansion of the faculty's HDR program by attracting high quality HDR students
5. Supervise the program of study of honours and postgraduate students engaged in coursework
6. Supervise honours research projects and postgraduate research theses
7. Act as unit coordinator
8. Contribute to academic and administrative leadership within the school and faculty by participating in the development of policy and strategy
9. Perform administrative and coordination duties that are necessary for the effective operation of relevant departmental programs
10. Maintain and broaden collaborative partnerships with relevant faculties and departments/schools within the University and community
11. Develop collaborative linkages and provide advice to government, industry and other relevant community organisations on relevant matters
12. Promote mathematical sciences as a discipline to potential students and the wider community

Key Selection Criteria

Education/Qualifications

1. The appointee will have:
 - A research doctorate in mathematics or a cognate discipline, and recognised as a leading authority in the relevant discipline

Knowledge and Skills

2. Evidence of outstanding scholarly activity of an international standard in Applied Mathematics and a demonstrated ongoing commitment to one or more programs of research
3. An outstanding record of research publications and a high international research profile

4. Demonstrated ability to generate research income, including from both traditional and more innovative sources of research funding
5. Record of successful supervision of postgraduate research students and the ability to make a significant contribution to postgraduate training programs in Applied Mathematics
6. Demonstrated ability to develop and deliver innovative and exciting teaching in mathematics to students at all levels and backgrounds
7. Very high-level communication skills and ability to liaise well with other academics, with a demonstrated capacity to work constructively and collaboratively with colleagues in furthering the aims of the school
8. Highly developed skills of leadership, networking and management, with experience in leading/building a research group

Other Job-Related Information

- Travel (e.g. to other campuses of the University) may be required
- Out of hours work (including evenings, weekends and public holidays) may be required
- There may be peak periods of work during which the taking of leave may be restricted

Legal Compliance

Ensure you are aware of and adhere to legislation and university policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness; Occupational Health and Safety, supporting a safe workplace; Conflict of Interest (including Conflict of Interest in Research); Paid Outside Work; Privacy; Research Conduct; and Staff/Student Relationships.