Mathematics and Statistics Doctoral Research Scholarship

A doctoral research scholarship awarded to outstanding candidates to undertake research on a project funded by the Australian Research Council.

The PhD student will work in the area of random fields that are described as solutions of stochastic differential equations on a sphere or a ball. The project will study properties and develop spectral analysis of these solutions. The obtained theoretical results will be used to construct new methods for numerical approximation and statistical estimation of these random fields. The research will be highly motivated by applications in modelling and analysis of cosmic microwave background data.

The principal project supervisors are Professor Philip Broadbridge and Dr Andriy Olenko. There will be collaboration with other project team members from Queensland University of Technology, and Cardiff University.

The Department of Mathematics and Statistics is a full member of the Australian Mathematical Sciences Institute, the Statistical Society of Australia Inc, and an institutional member of the Australian Mathematical Society. The research groups in Statistics and Applied Mathematics in the department is internationally well known. The department has a branch of the Kyushu University Institute of Mathematics for Industry, Japan. La Trobe's statistics research was rated 'well above world standard', the highest possible rating in Australia (Excellence in Research Australia, 2015).

Benefits of the scholarship

Benefits of the scholarship include:

- a La Trobe Research Scholarship for three years, with a value of $26,288 per annum, to support your living costs
- a fee-relief scholarship (LTUFFRS) for four years to undertake a PhD at La Trobe University (international applicants only)
- opportunities to work with La Trobe's outstanding researchers, and have access to our suite of professional development programs.

How to apply

This scholarship is open to new applicants only. Applicants should have a high level of achievement, including a first class honours degree or equivalent in Probability, Statistics, Applied Mathematics or a related field.

If you wish to apply for the Scholarship, follow these steps:

- review details on how to apply for candidature at: latrobe.edu.au/research/future
- submit an enquiry to Dr Andriy Olenko (a.olenko@latrobe.edu.au), indicating that you wish to be considered for the Scholarship.
- when you have received in-principle agreement for supervision, complete and submit your application to the Graduate Research School (grs@latrobe.edu.au) by 30 March 2016 for admission into La Trobe's PhD program, indicating you wish to be considered for the Scholarship.

The University will carefully review your application and consider you for the Scholarship.

You will be advised of an outcome in May 2016.

Closing date

Applications close 30 March 2016.

Contact us

If you require further information, please contact:
Dr Andriy Olenko (a.olenko@latrobe.edu.au)

Supplementary information (optional)

The Project `New Methods in Theory and Cosmic Applications of Spherical Random Fields' aims to investigate and model spherical random fields which are described as solutions of stochastic differential equations on a sphere or a ball. The project will study properties and develop spectral analysis of these solutions. The obtained theoretical results will be used to construct new methods for numerical approximation and statistical estimation of these random fields. In particular, novel asymptotic and statistical methodology will be developed for tensor random fields. The results will be applied to model and analyse cosmic microwave background data. The work will improve the accuracy in determining cosmological parameters and provide novel tools for better understanding of the Universe during its early stages.