

# Postdoctoral Fellowship

## Stochastic Dynamical Models of Viral Infection

An opportunity exists to work, as a Postdoctoral Research Fellow, on a project funded by an Australian Research Council Discovery grant. A motivated candidate with a PhD is required to undertake original research modelling the stochastic dynamics and evolutionary genetics of virus populations.

The research will take place jointly at Swinburne University of Technology and Melbourne University in Melbourne, Australia, in a new theoretical research group. These universities have a broad program of research, ranging from astrophysics to bioinformatics research, in conjunction with strong computational resources and a wide range of biological sciences institutions in Victoria.

This project will study theoretical population genetics and population dynamics from a viewpoint of modeling statistics and fluctuations. The project has a computational and quantitative focus, aided by close cooperation with experts in computational evolutionary biology at the University of Auckland. The candidate will be expected to travel to New Zealand to help the cooperative aspect of the program.

The successful candidate will focus on the highly relevant case of modeling viral evolution in a single infected host. Theoretical methods will include Monte-Carlo and stochastic computational and analytic techniques employing the Poisson representation as well as other methods. Familiarity with high-level computer languages would be useful, as would a knowledge of modern population genetics and the use of stochastic differential and Fokker-Planck equations.

You should possess a PhD in one of the following areas: population genetics, evolutionary biology, mathematics/mathematical biology, bioinformatics/computational biology, or statistical and computational physics with a willingness to learn the genetics background. The successful candidate should also have authored articles in international peer-reviewed journals.

This is a fixed term (two year), full-time appointment at Academic Level A/B, depending on qualifications and experience.

Applications close on June 1st, 2008.

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