

Postgraduate Scholarships are available to work in the ARC Centre of Excellence for Coherent X-ray Science. For more information see: -

<http://www.coecxs.org/>

Eligibility and student stipend are the same as for La Trobe University Postgraduate Research Scholarships or Australian Postgraduate Awards. For information and application forms, see:-

<http://www.latrobe.edu.au/rgso/scholarships.htm>

An additional budget of \$5000 per annum will be supplied to the student's lab to contribute to project-related travel and consumables.

The major problems of the 21st century will require cross-disciplinary programs. A new Centre of Excellence for Coherent X-ray Science has been set up with funds from the Australian Research Council and the Victorian State Government, involving scientists from Melbourne, La Trobe, Monash and Swinburne Universities and CSIRO. The Centre will bring together physicists, chemists and biologists to develop fundamentally new approaches to probing biological structures and processes. It combines world-class expertise in imaging, structural biology, laser science and molecular theory. The Centre will develop novel high-resolution imaging to determine the structures of important drugs targets whose molecular architecture cannot be determined with current techniques.

PhD students within the Centre will acquire an unusually wide range of experience of international standing that will enable them to develop careers across a broad range of disciplines. Research activities that cross discipline boundaries and participation in an annual conference of research students will be used to cultivate an interdisciplinary culture.

Students should contact one of the potential supervisors (below) for further information.

Research projects may be available in the following areas:



Associate Professor

[Michael Ryan <m.ryan@latrobe.edu.au>](mailto:m.ryan@latrobe.edu.au)

Mitochondria Biogenesis & Disease

Research in our laboratory focuses on mitochondrial biogenesis. In particular we study how mitochondria grow, divide & move in a cell & the diseases that arise as a result of mitochondrial defects. The project would involve preparation of mitochondrial membrane proteins for analysis using novel x-ray techniques.



Professor

[Leann Tilley <l.tilley@latrobe.edu.au>](mailto:l.tilley@latrobe.edu.au)

The Malaria Parasite

Work in my laboratory aims to understand the interactions of the malaria parasite with the erythrocytes of its human host. Novel coherent x-ray diffraction imaging techniques will be used to image the ultrastructure of malaria parasite-infected erythrocytes. This project would involve the development of novel methods for sample preparation and analysis including transfection of malaria parasites.



ARC Research Fellow

[Andrew Peele <a.peele@latrobe.edu.au>](mailto:a.peele@latrobe.edu.au)

Coherent Diffractive Imaging

My work involves manipulating x-ray wavefields in order to image samples that are not traditionally amenable to x-ray radiography. In this project we seek to quantify the interaction of an x-ray beam with cellular material to determine the detector sensitivity necessary to successfully perform an imaging experiment.