

Major development in coherent x-ray science



LA TROBE UNIVERSITY is one of a number of Australian and overseas universities and other organisations sharing a \$9 million Australian Research Council grant over five years to develop a Centre of Excellence in Coherent X-Ray Science.

Deputy Director of the Centre, La Trobe Professor of Biochemistry, Professor Leann Tilley said: 'The ARC funded Centre will

bring physicists, chemists and biologists together 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 project will develop novel high-resolution imaging and probing using the Australian Synchrotron, and ultimately x-ray lasers to determine the

structures of important targets for drugs whose molecular architecture cannot be seen with current techniques.

'An overarching scientific aim of the centre is the determination of the structure of membrane proteins,' Professor Tilley said. The Centre's Director is Professor Keith Nugent, Federation Fellow in Physics at the University of Melbourne. La Trobe's departments of Physics

and Biochemistry will participate in the program scheduled to start later this year. University Queen Elizabeth II Research Fellow, physicist Dr Andrew Peele, explained that x-ray sources were becoming ever brighter, and x-ray lasers would be available in the next 10 years.

'These sources will open up whole new areas of investigation such as the structural determination of

proteins not amenable to conventional methods,' Dr Peele said.

Another La Trobe academic involved in the research will be Dr Mike Ryan of the Department of Biochemistry (see 'Mitochondria Research', page 9).

Collaborating or contributing organisations include Melbourne (host institution), Swinburne and Monash universities; CSIRO divisions of Health Sciences and Nutrition and Manufacturing and Infrastructure Technology; the Australian Synchrotron Research Program; Walter and Eliza Hall Institute of Medical Research; Riken National University of Singapore; Lawrence Livermore National Laboratory, Advanced Photon Source, Chicago; and the Victorian Department of Innovation, Industry and Regional Development. ●

Photo from left, Dr Peele, Professor Tilley and Dr Ryan: many branches of science are converging to probe biological structures and processes.