



## New Biological Science Laboratory open at La Trobe Uni

*The CXS Biological Sciences Program team based at La Trobe University Bundoora, has opened its new laboratory and office space.*



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### Coming Events

#### Official Opening of the CXS

#### Femtosecond High Power Laser

#### Facility:

Mr Gavin Jennings MLC, Minister for Innovation, will be opening the new laser facility at Swinburne University of Technology on November 27th, 2007.

#### 2nd Advanced Optical Imaging

#### Workshop:

Organised by The University of Melbourne, School of Chemistry and Decker & Hickl GmbH, Berlin, this workshop will run from November 26 - 28th, 2007.

FOR MORE INFORMATION AND  
REGISTRATION TO THIS WORKSHOP

PLEASE VISIT:

[HTTP://UML.CHEMISTRY.UNIMELB.EDU.AU](http://UML.CHEMISTRY.UNIMELB.EDU.AU)

#### Malaria and Human Blood Cells

#### Tilley Laboratory

The CXS Biological Sciences Program team, headed by A/Prof. Mike Ryan, has moved into its new laboratories and office space on the fourth floor of the Physical Sciences building at La Trobe University Bundoora Campus.

After a six month refurbishment project funded by La Trobe University at a cost of \$2.2 Million, the two new laboratories replace the outdated, 30 year old laboratories previously used by the group. Completion of level four laboratory was the second stage of an ongoing refurbishment project to renovate the entire building, with the third level completed in 2006.

The Biological Science Program team welcomes visitors to tour its new facilities. For Further information please contact Ms Emma Duglas on 9479 3231.



#### Mitochondria Biogenesis and Disease

#### Ryan Laboratory

## In Brief

### Publications:

Publications for this quarter include:

CA Adisa, S Frankland, M Rug, K Jackson, A Maiser, AF Cowman, L Tilley (2007) *Re-assessing the location of components of the classical vesicle-mediated trafficking machinery in transfected Plasmodium falciparum*. International Journal of Parasitology 23, 268-277. (Front cover)

HM Quiney, GJ Williams, KA Nugent, (2007) *Non-iterative solution of the phase retrieval problem using a single diffraction measurement*, Physical Review Letters (resubmitted after review, 10 August 2007)

CJR Dunning, M McKenzie, C Sugiana, M Lazarou, J Silke, A Connelly, JM Fletcher, DM Kirby, DR Thorburn and MT Ryan (2007) *Human CIA30 is involved in the early assembly of mitochondrial complex I and mutations in its gene causes disease*. EMBO J. 26, 3227-3237.

NJ Hoogenraad and MT Ryan (2007) *Mitochondrial-nuclear communications*. Ann. Rev. Biochem. 76, 701-722.

X Wen, LV Dao, P Hannaford (2007) *Temperature dependence of photoluminescence in silicon quantum dots*. AJ. Phys.D: Appl. Phys. 40 3573-3578 doi:10.1088/0022-3727/40/12/005.

AD Kitchin, S Velate, M Chen, KP Ghiggino, TA Smith, RP Steer (2007) *Photophysics of a Dithioester RAFT Polymerization Agent and the Acenaphthenyl Model Light-Harvesting Chromophore*. Photochem. Photobiol. Sci. 6(8), 853-856.

### CXS Visitors:

Dr Dimitri Fursa from Curtin University in Western Australia visited the Theory and Modelling Program at The University of Melbourne.

On July 27th Dr Agnieszka Chacinska from the University of Freiburg, Germany visited La Trobe University and gave a seminar on protein import and folding in the mitochondrial intermembrane space.

Prof. Ian McNulty from the Advanced Photon Source, USA gave a number of seminars at La Trobe University and the Australian Synchrotron.

35 senior staff of Sichuan University, China visited the Australian Synchrotron hosted by Monash University's Dr John McDougall and The Australian Synchrotron's Rachel Taylor.

Frederic Bouly, a visiting student from Grenoble, France has joined the Ultracold Plasma Source Program for an approximate four months period.

### Conferences & Workshops:

The following CXS members attended the "Conference 2007" in Monterey California, USA on 25 - 28 June 2007:

- Dr Harry Quiney - Invited talk
- Dr Garth Williams - Invited talk
- Brian Abbey - Poster presentation
- Angela Torrance - Poster presentation
- Lachlan Whitehead - Poster presentation

A/Prof. Mike Ryan was an invited speaker at FASEB Summer Research Conference in Tucson, Arizona, USA, August 5-10 August 2007.

Prof. Leann Tilley gave talks at the MacFarlane Burnet Institute of Medical Research and Public Health and the University of Melbourne Bontany Department in July 2007.

Prof. Keith Nugent was a keynote speaker at ICMAT 2007, Singapore in July 2007.

Prof. Lap Van Dao and Prof. Peter Hannaford were invited speakers at the *3rd Asian and Pacific Rim Symposium on Biophotonics and Biophotonics Downunder II*, Cairns in July 2007.

A/Prof. Trevor Smith and Craig Lincoln attended the International Conference on Photochemistry, Cologne, Germany in August 2007.

Dr Jose Varghese attended the AIMECS07 meeting in Istanbul, Turkey in July 2007.

### In the Media:

The Experimental Methods Program appeared in The Age newspaper on 6th October 2007 in an article titled, *What does the Synchrotron do?*

CXS was featured in an article titled *POWER FAILURE!*, *Australasian Science*, December, 2007 page 20.

Prof Rob Lewis of the Detector and Beamline Science Program appeared on *The Conversation Hour 774 ABC Melbourne radio* in March of this year.

Dr Jose Varghese of the CSIRO program was featured in the *Biomedical Computation Review Summer 2007* in the story: *Early Examples - Anti viral drugs*. He also featured in *The Age National* article *A certain synching feeling leaving scientist beaming* in April.

### Welcoming New Members:

Welcome to the following new members to CXS:

- Prof. Chun Soo Go - Experimental Methods Program, University of Melbourne
- Dr Bo Chen - Experimental Methods Program, University of Melbourne
- Dr Paul McMillan - Biological Science Program, La Trobe University
- Linda Feketeova - Detector and Beamline Development Program, Monash University
- Niels Zijstra - Short Wavelength Laser Sources Program, Swinburne University of Technology

### Newsletter Changes:

The CXS newsletter will now be distributed seasonally.

CXS would like to apologise for the lateness of the Summer 2007 issue of the newsletter, which was due to unforeseen circumstances.

## Introducing Dr Chun Soo Go

*Rosslyn Ball sits down with Dr Chun Soo Go to talk about his life before joining CXS.*

Dr. Chun Soo Go, a visiting CXS Research Fellow, was born in Seoul, South Korea.

Soo graduated (Bachelor of Science) and received his PhD (Optical Physics) from Seoul National University.

Soo is a Professor at Wonkwang University in Korea and has been studying diffraction-related topics. He is particularly interested in the practical application of diffractive elements such as the spatial filter and the beam splitter.

As a member of CXS for the next year, Soo is doing experimental work with the CDI using a visible light, and based upon his experience with CXS, he hopes to participate in the X-ray research centre at his home institution in Korea.

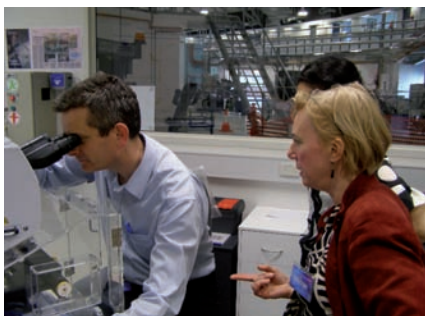
Soo has been married for 13 years and has two children aged 12 and 10.

In his spare time he likes doing exercises and watching sports. He also likes to travel with his family and one of his goals while he is here is to travel around Australia to see as much as possible of this wonderful country.



Soo settles into his new office at the CXS Centre in the University of Melbourne

## Art Forgery Case Under the Microscope



Dr Mark Tobin examines some paint samples relevant to a recent art forgery case

An elderly Melbourne couple were recently sentenced to three years jail, suspended for two years and three months, after being found guilty for forging paintings by Aboriginal artist, Rover Thomas.

CXS members Prof Keith Nugent and Dr Garth Williams; Director of the Centre for Cultural Materials Conservation at the University of Melbourne, Robyn Sloggett; and Infrared Beamline Scientist, Dr Mark Tobin of the Australian Synchrotron, recently examined some paint samples relevant to the case.

Using the Australian Synchrotron's infrared imaging microscope the group searched for infrared signatures in the samples to match against Rover Thomas' original artwork.

Although the examination of the samples was not related to the criminal case, it was an interesting exercise into the use of synchrotron science for all those involved.

## 3rd Annual CXS Workshop 2008 Announced

Following the success of the 2007 CXS Annual Workshop we are pleased to announce funding has been granted by the *DEST International Science Linkages - Element of the Science Academies Programme* to support our 3rd Annual Workshop in 2008.

The 2008 Annual Workshop Organising Committee will be chaired by Prof. Leann Tilley and will be made up of the following members:

- Emma Douglas (La Trobe University)
- A/Prof Andrew Peele (Experimental Methods Program)
- Dr Harry Quiney (Theory and Modelling Program),

- A/Prof Mike Ryan (Biological Sciences Program)
- A/Prof Trevor Smith
- (Short Wave Length Laser Source Program)
- Dr Jose Varghese (CSIRO).

It is likely that the workshop will take place in Melbourne or surrounding area and the event is rumoured to be held in late September 2008.

Check future editions of your newsletter for further details on the workshop and confirmed guests.



Guests at the 2nd Annual CXS Workshop

The University of Melbourne

Melbourne Vic 3010

Australia

Phone: 03 8344 5444

Fax: 03 9347 8912

E-mail: [cxsenquiries@](mailto:cxsenquiries@ph.unimelb.edu.au)

[ph.unimelb.edu.au](http://ph.unimelb.edu.au)

The ARC Centre of Excellence for Coherent X-ray Science (CXS) is an Australian Government Initiative which began in July 2005 to explore what can be achieved with coherent X-ray optics; including an understanding of exotic phenomena such as X-ray phase discontinuities.

CXS headquarters is located at the University of Melbourne in Victoria, Australia, with participating nodes at La Trobe University, Monash University, Swinburne University of Technology and the CSIRO. Its mission is to be the world leader in the development of non-crystallographic techniques for the determination of protein structures.

"In Coherence" is produced quarterly by CXS. Contributions are welcome and should be forwarded to Ms. Tania Smith, CXS Chief of Operations, University of Melbourne Vic 3010, faxed +61 3 9347 8912, Email: [cxsenquiries@ph.unimelb.edu.au](mailto:cxsenquiries@ph.unimelb.edu.au) or Ms. Rosslyn Ball, Administration, Email: [r.ball@ph.unimelb.edu.au](mailto:r.ball@ph.unimelb.edu.au)

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Special thanks to Rosslyn Ball and Emma Duglas for their contributions to the Summer 2007 edition.

## Aurora Symposium Award Winner!



Gregory Barbante is presented with his first place award by Prof Leann Tilley

*Congratulations to Gregory Barbante for winning first prize in the Student Research Poster Awards at the Aurora Symposium on 28th September 2007.*

*Greg was awarded prize money and a 1 year subscription to the Journal of Chemistry.*

*"When I heard my name being called as the winner I was shocked!" Greg said "It's so great to win this as it shows that people appreciate the work I've done and that the work is getting out there, especially after spending most of my time in a lab!"*

*Other winners of the poster awards went to Chai Ng in second place and Ellen Reid as the third place/Honours prize*

*winners.*

*The Aurora Symposium was held on the 27 - 28th of September 2007 at La Trobe University. This inaugural event was established by the CSIRO Molecular and Health Technologies Division and the Biological Sciences Program at La Trobe University as part of a Collaborative Research Program (CRP) to provide a forum for researchers of all levels to showcase their current research activities and to consider further research and collaborative opportunities.*

*Key features of the CRP are:*

- To produce high quality, capability driven research activity and outputs that will have impact in academia and industry - with emphasis in multidisciplinary fields;*
- Strategic positioning in priority areas to gain external competitive research funding to continue collaboration; (ARC Discovery, ARC Linkage, NIH, EU Funding), and to access major infrastructure funding (ARC Linkage Infrastructure Equipment and Facilities (LIEF) grants, etc.*
- Provide CMHT and La Trobe University access to a pool of jointly supervised post-graduate students, through the funding of aligned projects;*
- Facilitate access to specialised skills and infrastructure for both*

*organisations.*

*Guest speakers at the symposium were:*

- Professor Calum J. Drummond, CSIRO Industrial Physics/ Manufacturing and Materials Technology*
- Professor Colin Ward, The Walter and Eliza Hall Institute of Medical*
- Research Professor Erich Weigold, Pro Vice-Chancellor (Research), La Trobe University.*

*CXS had the pleasure of contributing \$500 toward the Student Poster Awards, with Deputy Director, Prof Leann Tilley conducting the presentation.*



Connie Darmanin, Leanne Tilley, Amanda Aloia and Jenny Carmichael at the poster session.