

# news letter



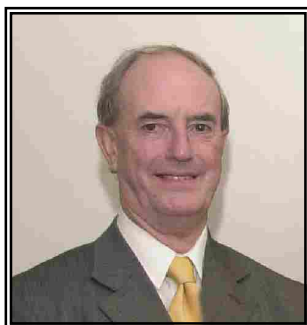
## GREEN CHEMISTRY DOWNUNDER

*Centre for Green Chemistry*

*Issue 7- August, 2002*

### From the Director

Professor W. Roy Jackson, Director



The Centre was reviewed over two days, Monday 8<sup>th</sup> and Tuesday 9<sup>th</sup> July, by an ARC panel comprised of Prof. Lawrence Cram, Executive Director, Physical and Earth Sciences, Dr Robert Watts, Chief Scientist and Vice-President of BHP-Billiton and Belinda Tyrrell from the ARC secretariat. The panel asked

some probing questions of staff and students. We await their written report with confidence but anticipate that they may well recommend some changes on the emphases that the Centre places in different research areas.

Milton Hearn has officially taken up his position as Professor of Chemistry in the School of Chemistry and Ms Judy Stewart has joined us as his personal assistant. The Centre will benefit from Milton's involvement in the various programs being pursued with vigour, including its drive to gain an enhanced international competitive edge through major infrastructural initiatives. Included in these developments is the Centre's involvement in the Institute of Molecular Nanotechnology which recently received \$12 million in funding from the Victorian Government's Science, Technology and Innovation funding program. Staff of the Centre will be key players in this initiative with particular emphasis on the interface between nanotechnology, biotechnology and green chemistry.

The Centre has hosted two distinguished visitors Prof. Teresa Head-Gordon from the University of California, Berkeley and Prof. Paul Pringle from the University of Bristol, U.K. Each gave an interesting seminar on their work and Prof. Head-Gordon spent several days in the Centre interacting with students.

The Centre was strongly represented at the recent IUPAC Conference on Organic Synthesis, held in Christchurch, New Zealand, from 14<sup>th</sup> to 18<sup>th</sup> July. Janet Scott gave an invited lecture and Dilek Saylik, Euneace Teoh, Waldo Correa and Brett Roberts presented posters. I was invited to address the PACIA Annual General Meeting held in Canberra in June and more recently the RACI/Risk Engineering Society on *Manage Your Waste – Jobs at Risk*. On each occasion audience feedback was excellent with the promise of follow-up visits to the Centre from representatives of both large and small companies. In addition, I visited Japan as an advisor to one of my former students Dr Peter Redlich. Peter is Senior Policy Officer, STI, Department of Innovation Industry and Regional Development and was visiting Japan to promote research interactions at government level

between Victoria and Japan. We visited large companies, for example Mitsubishi and Idemitsu, and government organisations, NEDO, CRIEPE, and METI. Whilst in Japan I gave a seminar at the University of Kyushu and had discussions with Prof. Kitajima, Chairman, International Cooperation Group, Green & Sustainable Chemistry Network, Japan. Dr. Chris Strauss attended the 5<sup>th</sup> Annual Symposium on Green Chemistry held in Hefei, China in May and presented an invited lecture.

### The Centre – an overview

Since its inception in 2000, the Centre has attracted a wide range of active researchers from within the School of Chemistry, the Faculty of Science and other faculties at Monash University, from State Government and CSIRO laboratories, from other Australian and International Universities and from Australian and international industry. Publications in international refereed journals, conference presentations and collaboration with workers in a range of institutions have risen dramatically, from 8 in 2000, to 25 in 2001 and 16 (with a further 12 in press) in the first three months of 2002. Conference presentations show a similar increase, 13 in 2000, and 19 in 2001. Many of these publications and conference presentations involve authors from collaborating laboratories.

The Centre has far exceeded the number of higher degree students that it originally had expected to attract. Currently, 2 M.Sc. and 30 Ph.D. students are enrolled in projects supported by the Centre. A number of these (13) come with support through Australian Postgraduate Research Awards, Monash Graduate Scholarships or other funds.

Memoranda of Understanding have been signed with the Centre for Molecular Design and Synthesis at Korea Advanced Institute of Science and Technology (KAIST), Korea and with Consorzio Interuniversitario Nazionale "La Chimica per l'Ambiente" INCA (Interuniversity Consortium "Chemistry for the Environment"), Italy. These agreements aim to identify areas where meaningful and profitable interactions will be established, potential sources of funding will be defined and a timetable for action laid down.

Industrial collaborations with small, medium and large companies have been established, both within Australia and internationally. The Centre has received international recognition through its collaborations with other Green Chemistry organisations, publications in international journals and invitations to speak at national and international conferences.

With the appointment of Milton Hearn as my successor each of these areas will be further strengthened through his connections with industry, his role on international peak bodies related to our fields of expertise and through his multidisciplinary research program. The Centre for Green Chemistry thus has a bright and growing future.

## Community Education Program takes off.



The Community Education Program is growing rapidly with Mike Clarke, the part-time Green Chemistry Community Education Officer, visiting more than six schools and giving two conference presentations during the last three months. Mike, ably supported by Nick Barlow (who is doing a Green Chemistry Honours project), presents an exciting lecture with lots of

whistles and bells ... and explosions, frothing reactions, luminescent solutions, energy drinks and light sticks. The planned 30-45 minute lecture often runs on for far longer as the students quiz Mike on all sorts of aspects of Green Chemistry as well as potential careers! Anyone who is under the mistaken impression that year 10 and 11 students are complacent with regards their futures should attend one of these sessions – the students ask all the tough questions like ‘are big companies actually using Green Chemistry?’, ‘what jobs are available in Green Chemistry?’ and ‘which is the best university to attend to do Green Chemistry?’. Feedback about the program has been excellent with the highest accolades coming from a younger, year 7 student, at Carey Baptist Grammar School, who said

*“On Wednesday a person came to talk to us about green chemistry and I was fascinated. I am only in yr 7 but I already know that I want to do something to do with science and green chemistry looked just like what I want to do”*

The program really got going after Mike helped to develop a set of slides for the RACI sponsored Hartung Youth Lectures delivered by Janet Scott in 2001. Changes in legislation and increased liability insurance meant that many schools were unable or unwilling to travel to a central location for the lectures and so a more compact traveling version was developed to go ‘on-the-road’ to schools. Enquiries have been received from as far away as Ararat in Eastern Victoria and Mike and Nick will often give a series of demo lectures to different age groups in one school on the same day. While this is exhausting for the presenters, it does help to maximize return for travelling time. Offshoots from the program such as a teacher’s workshop, to be run in conjunction with the Department of Education Employment and Training (DEET), Monash Open Day lectures and articles about Green Chemistry in the CSIRO science magazines *Scientrific* and

*Double Helix*, aimed at primary and secondary students respectively, continue to develop. Already the time is rapidly approaching when availability will be outstripped by demand. The Centre’s Director, Prof. Roy Jackson, who is renowned for his exciting lectures and magic shows, will be delivering the Tasmanian Youth Lectures this year and he and Mike plan an intensive lecture tour of Tasmania this month.

If you want to book the presentation (or have any further questions) please email [michael.clarke@sci.monash.edu.au](mailto:michael.clarke@sci.monash.edu.au) or you can contact the *Centre for Green Chemistry* on (03) 9905 4547 or visit our web page at <http://web.chem.monash.edu.au/greenchem>

## Staff Profile – Dr Dilek Saylik



Dr Dilek Saylik commenced a post-doctoral research fellowship here at the Centre for Green Chemistry in April 2001. Her project at the Centre involves the preparation of optically active pharmaceutical intermediates through the development of a convenient, widely applicable, environmentally benign process under the supervision of Dr Chris Strauss and Dr Janet Scott.

Dilek began her undergraduate studies at Monash University in 1993 with majors in Chemistry and Pharmacology. Her interest in chemistry led her to pursue an Honours degree with Professor Roy Jackson in the area of synthetic organic chemistry. In 1997, Dilek started a Masters degree with Professor Jackson working on *A Phosgene-Free Route towards the Preparation of Organic Isocyanates* in collaboration with ICI Australia and later transferred to a Ph.D. degree that focused on *A New Enantioselective Route to  $\beta$ -Amino Acids*. The results achieved have led to four publications in chemical journals including the *Journal of Organic Chemistry*, *Tetrahedron Asymmetry* and *Australian Journal of Chemistry*.

Once Dilek’s post-doctoral position is completed she hopes to commercialise her research in a ‘spin-off’ company established by Monash University through the Centre. This is a challenging ambition, which will provide an excellent model for the commercialisation of innovative Green chemical processes when successful.

Dilek is a dedicated chemist who enjoys the challenges that Green Chemistry involves where she is helping to create new environmentally friendly chemical innovations that are ‘benign by design’.