

WELCOME TO:

Dr Peter Wilson from Otago University in Dunedin, who joined the School on 9 December, spending the next 2 months as a Senior Research Fellow conducting research in collaboration with Professor Tony Haymet, Chief Designate of CSIRO Marine Research.

FAREWELL TO:

- **Dr Shusheng Zhang** who joined the ACROSS Group in September 2001 as a postdoctoral research fellow. Zhang left Australia on 26 November to return to Zhenzhou University, China.
- **Dr Wenchu Yang** who will be leaving Australia towards the end of January 2003 Yang joined the ACROSS Group in November 2001 as a postdoctoral research fellow and will return to Xuzhou Medical School, China before possibly heading off to a new position in the US.

CONGRATULATIONS(and in some cases FAREWELL) TO:

- Recipients of offers under the **Institutional Research Grants Scheme (IRGS) 2003**
 - **Dr Greg Dicoski:** \$14,000 for "Can Molecular Modelling be used to predict Electrophoretic Mobilities of Molecules of Critical Importance to Capillary Electrophoresis?"
 - **Dr Michael Gardiner:** \$14,000 for "Advanced Studies of Alkali Metal Superbases"
 - **Dr Trevor Lewis:** \$10,000 for "A New Ion Selective Electrode for the Determination of Nitrate Chemistry Ions in Natural and Waste Waters":
 - **Dr Mirek Macka:** \$16,000 for "Pulsed Potentiometric Detection: A New Electrochemical Detection Technique for Capillary Electrophoresis and Chip-Based Miniaturised Analytical Devices".
- Recipients of **Vacation Scholarships 2002/2003**

Brendon Gourlay (Dr Jason Smith)	Roderick Jones (Dr Vicki Tolhurst)
Sarah Kellaway (Dr Trevor Lewis)	Daniel Lester (Dr Peter Wilson)
Bryce Lockhart-Gillett (Dr Greg Dicoski)	Elijah Marshall (Dr Trevor Lewis)
David Schaller (Dr Brian Yates)	
- **Honours Students** on completion of their course: Bonnie Atkinson, Margaret Mary Dooley, Amanda Glover, Nathan Newman, Alison Radford and Samra Tulumovic. We wish them well for the future and hope to see some of them back as PhD students next year.
- **Michael Batten** on his position with Comcoat Pty Ltd in Melbourne whilst completing his thesis before joining Susan in Exeter later in 2003.
- **Kirsty Hawkes**, who has been visiting the School since April 2001 from the University of Cardiff, on her appointment as a research assistant to Dr Peter Wilson.
- **Cameron Johns** on submission of his PhD thesis. Cameron will be working with the ACROSS group for the next couple of months as a research assistant.
- **Christian Narkowicz** on submission of his PhD thesis and postdoctoral appointment with Professors Murray Monro and John Blunt at Canterbury University, Christchurch, New Zealand.
- **David Nielsen** on his postdoctoral appointment with Dr Charles Young at Melbourne University. David will return briefly in the New Year to submit his PhD thesis.
- **Susan Oats** on successful completion of her PhD thesis and postdoctoral appointment with Professor Anthony Legon at Exeter University, UK next year.
- **Dr Karen Stack** who has been awarded the 2002 Oertel Nadebaum Award by APPITA, the Technical Association of the Australian and New Zealand Pulp and Paper Industry. The award is given for outstanding service to APPITA and is presented to someone who has made a substantial non-technical contribution to APPITA over a number of years. Karen has been a member of APPITA for 21 years and has been on the local section committee for 14 of those years. She has served 2 years as Treasurer and 7 years as Secretary. She has been on 2 Annual General Conference organising committees and 1 Workshop seminar organising committee during her time with APPITA. She will be the first female to receive the award. She will be presented with a plaque at the 57th APPITA Annual General Conference to be held in Melbourne in May 2003.
- **Dave Vercoe** and Sarah Prior on their engagement 19 September 2002. The wedding date has been set for 4 December 2004 at the Uniting Parish of Glenelg in South Australia.
- **Dr Brian Yates** who has been nominated to the Merit Allocation Committee of the Australian Partnership for Advanced Computing (APAC) which runs the national supercomputing facility for Australian universities in Canberra. This committee of APAC meets twice a year to allocate competitive grants of computer time on the facility to researchers throughout Australia.

CONFERENCES & MEETINGS

- **Dr Adrian Blackman** recently attended the **1st International Congress on the Chemistry of Natural Products**. The congress was held in **Trabzon, Turkey** on **16-19 October**. Adrian was an invited member of the International Scientific Committee: he also presented a poster, co-authored by Christian Narkowicz together with Ern Lacey, Jennifer Gill and Kirstin Heiland, and chaired one of the scientific sessions. Trabzon is situated on the Black Sea coast in the north-east part of Turkey. It is a bit larger than Hobart and has a similar climate but a much longer history being founded in the 2nd century BC.
- **Dr Greg Dicoski** and **Dr Brian Yates** attended the **RACI Chemical Education** conference held in **Melbourne** in the first week of **December**. The theme was "rejuvenating the teaching of chemistry" and many interesting ideas and examples were presented. Monday provided an opportunity to get back into the lab and explore a range of interesting experiments as part of the ACELL project. Brian presented a poster on the use of molecular modelling in the undergraduate curriculum. A meeting of the division confirmed that the next Chemical Education conference will be held in Hobart in February 2004.
- **Professor Paul Haddad** and **Dr Brian Yates** took part in a recent meeting of the **Editorial Advisory Board of the Australian Journal of Chemistry**. This journal has been revitalised under the leadership of the editor, Alison Green, and a number of new initiatives were discussed for 2003. It is pleasing to see that one of our graduates, Richard Hecker (Chemistry Honours 1993), recently took up the position of assistant editor of the journal.

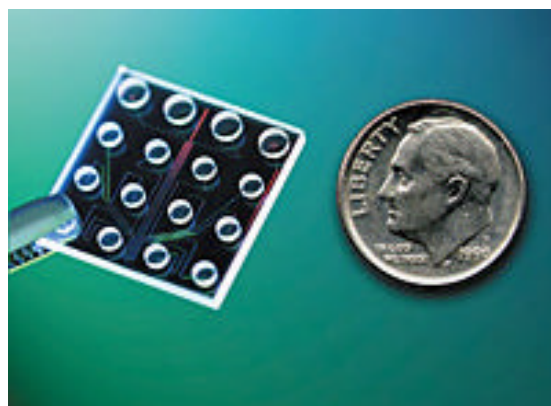
MIREK'S 'CHIP FACT-FINDING MISSION'

What chips? Neither wood, nor potato. Not even electronic microchips. The chips we are interested in are 'chemistry' chips - devices (see pictures) similar in size to their electronic ancestors, but with micrometer-sized channels filled with liquids - solutions of samples and reagents. These can be moved around the chip usually by



voltage using principles common in capillary electrophoresis, and, for example, reacted, derivatised, PCR-ed, separated, detected etc. etc. All that is done on the chip inside those tiny channels - that is why the concept is often referred to as 'Lab-on-the-chip'. The main benefits of the small dimensions are high speed of processes on the chip (reactions, separations etc.) and low consumption of the samples and reagents. These advantages have spurred probably the most exciting and in many ways breathtaking developments in the areas of analytical and bio-analytical chemistry of the past decade, and the trend is set to continue. Therefore **Dr Mirek Macka** went on a fact finding mission to Holland, Ireland and UK, and visited 7 universities and institutes in 4 cities in 3 countries in 12 days. In Holland he visited the University of Twente in Enschede and the MESA institute at this

university, and the Technical University Delft and the DIMES institute at the university (Hugo Billiet at TU Delft says hello to everybody and is looking forward to his next visit to Hobart). Then he visited the Dublin City University and the National Centre for Sensor Research (NCSR) situated at the DCU (Brett Paull who worked here as a lecturer (May 95 - December 97) is doing very well with an analytical group with 6 students and sends regards to everyone who remembers him). Finally Mirek visited the guru of chemistry chips Prof. Andreas Manz who pioneered chip development (then at Ciba Geigy) some 15 years ago, and for the past 7 years has worked at Imperial College in London, UK. The knowledge gained by Mirek on a number of technical issues necessary for running research in the area will make it possible for ACROSS to start research in the 'chip' area in 2003.



The photographs show examples of some research and commercial chips.

X-RAYS SOON TO BE PART OF LIFE ON BASS STRAIT CROSSING

Nothing to do with post September 11 security — for one night we are hoping for a calm crossing to transport the recently purchased single crystal Xray diffractometer from Melbourne to its new home in Hobart. Dr Michael Gardiner is spending the week 9-13 December in Melbourne being trained on the instrument at the University of Melbourne before driving back (with a little help from one of the Spirits).

WHAT....? A NEW NMR!!!

The School of Chemistry will soon be the recipient of a nice new Varian NMR spectrometer. The new instrument is a Mercury *Plus* 300MHz spectrometer and will replace the old outdated and unfriendly Gemini 200MHz machine. The new instrument will give a boost to research as operators will be able to obtain and process more advanced experiments in shorter time and with greater sensitivity and resolution. The Mercury *Plus* is an advanced instrument which enables simple switching between a routine 4 nucleus operation (^1H , ^{13}C , ^{19}F , ^{31}P) to broadband operation without the need for changing probes. The instrument also comes with a long hold dewar which means liquid helium fills every 8 months rather than ~ 8 weeks. The new spectrometer represents a major investment in research and teaching by the School of Chemistry and Faculty of Science, Engineering & Technology. If all goes well it should be up and running by April.

So if any one is in the market for a slightly used 200MHz spectrometer with one owner and good suspension come on down to "Allan's used NMR Emporium".

THE END OF AN ERA: -THE DEMISE OF THE VARIAN GEMINI 200

by Marshall Hughes and Martin Hitchman

One of the charming features of the old system (which we won't miss at all) is the very short hold time of the magnet dewar. It required filling every 80 days, (the new one will need filling on a 230 day cycle).

The liquid helium to fill the magnet comes from Sydney and over the period we have had some very "interesting" fills.

- When we used sea transport, waiting till the shipping container was filled before forwarding it, and, like as not, losing the dewar in Devonport/Launceston.
- CIG forgetting to put the absolute pressure valve on our dewar when we shifted to air freight. Ansett didn't seem to notice any squeaky voices about the place, despite the dewar losing about 15Litres of Liquid Helium in the unpressurised hold.
- A nameless Ansett employee wheeling the old 30 Litre dewar rapidly across the freight terminal, hitting an obstacle, breaking two of the wheels off the bottom and laying it down flat with a bang. It didn't like that and proceeded to spit fog and liquid for some time after; causing the building to be evacuated and the Fire Brigade to be called. It arrived at the Chemistry Loading Bay mournfully propped up on a wooden box and missing one third of its contents.
- Delivery with a faulty seal in the top of the dewar and the neck frozen up with a solid air plug and nervously trying to unplug it (hoping that the alternative pressure vents were functioning correctly).
- Trying to rescue a jammed transfer tube from a misaligned guide tube inside a CIG hired dewar.
- The CSL have had one dewar delivered with hardly anything left in it and a huge dent in the side where another nameless Ansett employee tried to shift it balanced on one leg of a forklift truck. It didn't work, and, yes, yet another building evacuation resulted.
- You will be pleased to know that the most recent (very likely) last fill went quite well and aside from the odd phone message (We can't deliver it this week, Oh yes perhaps we can!!).

Yes twice a year should be fine, thank you very much!!!

THANKS TO SEMINAR SPEAKERS

Professor Ian Ritchie, Pasminco Visiting Lecturer, "Gold Fever"

Dr Andrew Bowie "Iron Biogeochemistry in the Southern Ocean Using Flow Injection Chemiluminescence: the SOIREE and CLIVAR Expeditions"

Dr Keiran Lim, Deakin University, "On the Ability of Beginning University Students to Use ICT as Part of Their Learning"

Perran Cook, PhD Final Seminar, "Carbon and Nitrogen Cycling on Intertidal Mudflats in the Huon Estuary, South East Tasmania"

Dr Les Larkworthy, University of Surrey, "Some Coordination Chemistry of Chromium(II) and Vanadium(II)"

Professor Igor Novak, National University of Singapore, "Chemical Education: The Missing Links" and "Electronic Structure of Some Organic Molecules"

*The School would like to thank **Dr Brian Yates** for once again arranging and coordinating an excellent seminar program for 2002*

UNIVERSITY GOLF DAY

The 10th University Golf Day held at Kingston Beach Golf Club on Friday 6th December was attended by several staff and family from the School from both Campuses. The spoils of victory went elsewhere this year, as did the numerous lucky door prizes. Not all went away empty handed, Vicki Tolhurst's and Michael Gardiner's teams

made a play at the richest prize on the day (for coming 2nd last), but could only manage minor prizes for 6th and 4th last! Paul Haddad surprisingly went away empty handed after being a consistent lucky door prize winner over recent years. There were the usual hard luck stories always prefixed by "if", but there will always be next year (we hope)

IN MEMORY OF BILL DIXON

Bill Dixon, the first glass blower in the Chemistry Dept, arrived in Tasmania from the University of Reading in 1961. He had been encouraged to emigrate by Dr Geoffrey Cheeseman, recently arrived from the University of Reading. It was a big decision for a man in his forties with several children to relocate. I owe a particular debt to Bill as he helped me construct a complicated vacuum line for my PhD work. He was invariably pleasant and nothing was too much trouble for him. Bill's remarkable glass blowing skills enabled a visiting Canadian Professor to return with some delicate gauges that no one in Canada or the USA could produce. He was a great boon to the Chemistry Department.

Bill had no trouble taking initiative when bureaucracy was slow to act. After waiting two years for a much needed doorway from the glass blowing workshop to the storeroom he took matters into his own hands. He borrowed a sledge hammer, broke his way through the wall and tidied up the opening with some mortar. The VC and Registrar were brought in to view the unauthorised work. To Bill's surprise, instead of a reprimand he was commended. I don't think he would escape so lightly today.

Bill had several close calls with death as a young man in England, and on one occasion in the Chemistry Department when an honours student brought him a long glass vial to open. The vial contained an explosive mixture that burnt Bill very badly and forced him to spend a long time in hospital. Bill retired from the department in 1977. He was diagnosed with terminal lung cancer at the age of 60. To the doctor's amazement the cancer mysteriously disappeared and he died peacefully on the 17 November 2002 aged 90. Always a devout Christian, he was dearly loved by his wife, four children, nine grandchildren and nine great grandchildren. At his funeral it was a delight to witness the high regard in which Bill was held by the members of his church.

Dr Noel Roberts
Former Reader in Chemistry
Honorary Research Associate

PLEASE NOTE:

- The Faculty of Science and Engineering has been renamed "**Faculty of Science, Engineering Technology**".
- University addresses will change effective 1 January 2003. For Hobart, "GPO Box 252-XX" will be replaced by "Private Bag XX", i.e the new address for **School of Chemistry in Hobart** will be "**Private Bag 75**"; for Launceston the hyphen will be discarded from "Locked Bag 1-XXX" to "Locked Bag 1XXX", i.e the new address for **School of Chemistry in Launceston** will be "**Locked Bag 1371**".
- Professor Paul Haddad will be Acting Head of School from 2-26 January 2003 inclusive, while Professor Allan Canty is on leave.
- **Access to the Chemistry Building** from **25 December 2002 to 1 January 2003 inclusive** will be by **proximity card** and **only for office work** — laboratory work will not be permitted. Security have been informed of these restrictions. If you intend to access the Chemistry Building during this period, please notify the Building Controller, Dr Greg Dicoski, so your name can be placed on the list to be provided to Security.
- The **Chemistry Building will be shutdown** (locked down) from **25 December 2002 to 1 January 2003** inclusive. This means (remainder to be provided by Greg after Safety Committee meeting)
- **Siemens Science Experience** will be held in Hobart 14-16 January coordinated by Dr Brian Yates and in Launceston 21-23 January coordinated by Dr Trevor Lewis.

Thank you for your contributions for this issue of *ChemNews*.
The next *ChemNews* will be issued on Friday, 7 March 2003
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