

# IFS & Bits

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## Deadline for Next Issue

12 November 2001

## Editor

Terri Palmer

## Messages from the Head of Institute

This edition of IFS and Bits is a somewhat abbreviated one in that I wish to inform staff of building changes that we will be experiencing in the very near future. It also provides me with an opportunity of congratulating Geoff Jameson on a tremendous achievement and David Officer on gaining three new research grants.

### Geoff Jameson, Fellow of the NZIC

I am delighted that Geoff Jameson's achievements have recently been recognised by the award of Fellowship in the New Zealand Institute of Chemistry (NZIC). Geoff has a very impressive CV and is justifiably recognized as a crystallographer of international reputation. Indeed, structures of particular difficulty are referred to him as someone who is able to crack the hardest problem. Andrew Brodie has detailed more about Geoff's achievements later in this Newsletter. Congratulations Geoff. Everyone in the Institute is truly delighted by the recognition that this Fellowship has rightly bestowed upon you.

### Building Changes and Staff Movements

As I indicated in the last newsletter Professor Robert Anderson and his office are to be relocated into Science Tower B. We expect this move to take place in late November. In the meantime we have vacated the HoI area on Level 2 and Terri, Vern and I are now in rooms ScB3.12, ScB3.14 and B3.13 respectively. Darren Englebretsen has vacated room ScB2.21 and has moved to ScC4.10. Shortly, Bob Parsons will move into Andrew Brodie's Office (ScB4.13) and Andrew will move into the office currently occupied by Paul Buckley (ScA4.19). Finally, Paul will share the office occupied by Roger Reeves (ScA3.20). As far as IFS is concerned this should represent the end of the office changes required of us.

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## ***Building Changes and Staff Movements*** *continued...*

The Lecture Theatre ScB2.16 and part of the Common Room will be carved off and used for offices. Furthermore, the offices in the link area on Level 2 will be occupied by staff from the PVC Office. At first sight it looks as though we will be losing a very useful lecture theatre but in practice we will be gaining. It is planned that ScA1.14, currently used for consultancy purposes will be converted into a Lecture Theatre to hold about 60. In addition, the area opposite Electronic Services will be turned into a Tutorial Room seating about one dozen. This will be used for Mathematics Consultancy and indeed Chemistry and Physics Consultancy in 2002. Thus, teaching facilities immediately adjacent to and within IFS space will be enhanced. It is hoped that these building modifications will commence within a few days, for completion by mid-November. The Common Room area will be reduced at one end (where new offices will be built) but increased at the other end by removing the wall between the existing room and two rooms previously designated physics research space. The overall area will be reduced a little but will be refurbished. This will include new ceiling tiles, carpet and the area will be painted. The kitchen area is also to be improved. The Common Room and Tutorial Room are expected to be the first parts of the building to be modified, but it is planned that the Common Room will remain operable over much if not the entire time over which the refurbishment is scheduled. Obviously, there will be times when staff will be inconvenienced a little but I ask for your tolerance over those periods. By mid-November the disruption should be at an end and I believe that we will then have markedly superior facilities in the Common Room compared to those we have at present.

Within the Newsletter you will see a plan of the changes which are envisaged. Some alteration of these is very probable over the next few days but the overall scheme of things is unlikely to be changed in a significant way. If Bob Parsons or I can provide any further information to staff then we would be happy to do so.

## **David Officer – Three New ARC Grants**

Congratulations to David Officer who achieved the rare distinction of gaining three ARC grants in the recent round. One was with his colleagues in Wollongong, one with a physicist at the University of Newcastle and the third was with chemists at the Central Queensland University in Rockhampton. Superb effort David. Congratulations!

*David Parry*

## **Congratulations Geoff Jameson**

Congratulations to Geoff Jameson who has been elected as Fellow of the New Zealand Institute of Chemistry. This is a well deserved honour for Geoff and a recognition of his outstanding research in both structural biology and structural chemistry. Internationally, Geoff is recognised as a top crystallographer and is often asked to sort out structures that others from around the world cannot solve. A recent example of this was featured on the front cover of *Angewandte Chemie International Edition* (one of the top chemistry journals). It was the first example of a compound with a quadruple bond between elements of two different groups. Geoff has also been involved in a number of key structures of proteins including superoxide dismutase derivatives.

Geoff's election means we now have seven Fellows of the NZIC in IFS (the others are Eric Ainscough, Al Neilson, John Ayers, Roger Reeves, Andrew Brodie and David Parry).

Congratulations to Richard Haverkamp from the Institute of Technology and Engineering who was also elected to FNZIC at the same Council meeting.

*Andrew Brodie*

## NZ Mathematics Week at Massey

Mathematics Week in New Zealand is part of an international annual event, recognising and celebrating mathematics. Massey participated in this year's national public awareness programme during the week of 13-17 August 2001. As in the past three years, the Mathematics Discipline of the Institute of Fundamental Sciences ran a mathematics competition expressly aimed at undergraduate students currently studying at Massey. For the first time the competition was extended to students at all Massey campuses. Four cash prizes and certificates were offered to students who provided the best solutions to six mathematics problems. The judges defined "best" not in the orthodox terms of getting the right answers but rather as displaying an innovative approach to the comprehension and solution of problems, together with a demonstration of reasonable and convincing explanations.

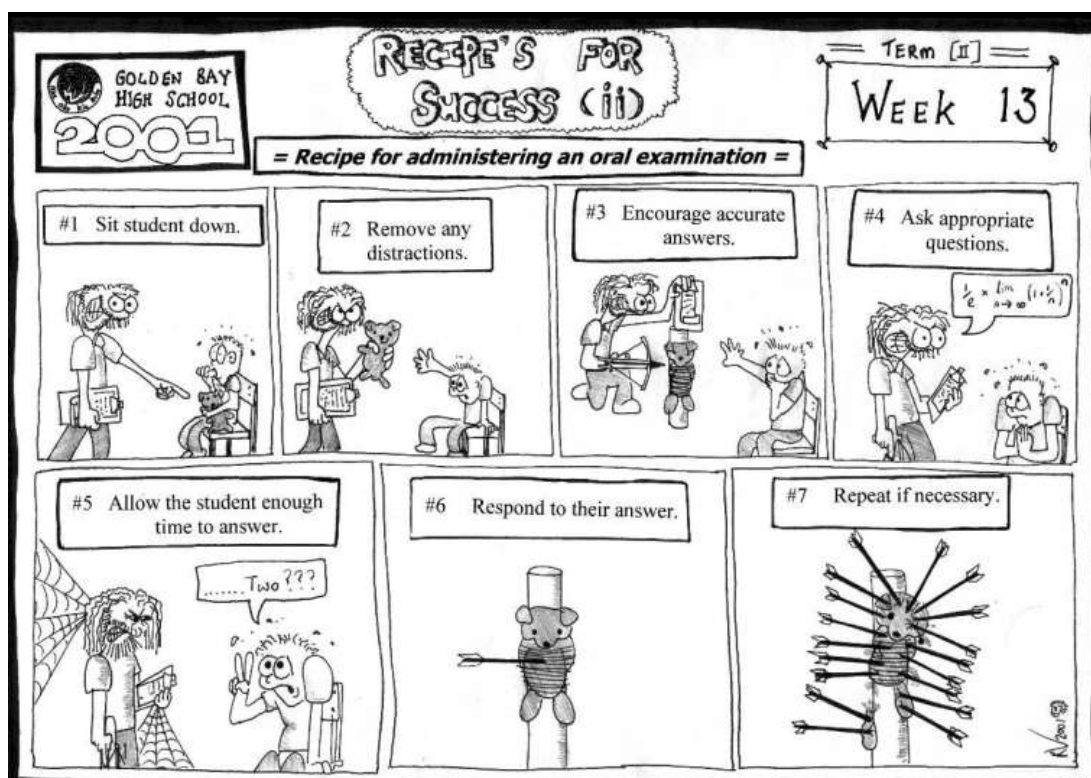


From Left: Kee Teo, Chao Li, Timothy Bedford, James Simpson, Mike Hendy, Gillian Thornley and Dean Halford

Judges Gillian Thornley and Kee Teo (the organiser) from the Institute of Fundamental

Sciences were highly impressed with the contestants' creative solution. It was pleasing to see that some participating students were using programming such as C, and Excel to tackle some problems. Gillian and Kee would like to join with all the Mathematics staff in expressing their congratulations to the three winners. The Top Prize was jointly won by James Simpson and Tim Bedford and the Novice Prize (First Year student) was awarded to Chao Li.

Kee Teo



## Geoff Jameson's Travels

Eighteen years ago, I ventured from Washington DC to Florence, Italy for ICBIC One, the first International Conference on Bioinorganic Chemistry. In late August of this year I returned to Florence for ICBIC Ten – the neon jubilee. The trip started uneventfully enough – coffee in the Palmerston North Airport with Mike Hendy, before sharing the same planes to Auckland and then onto Singapore, where things took a turn for the worse. I arrived in Frankfurt with a headache, and after making a complete loop through one checkpoint and out another and back through the first, I eventually found my flight to Florence. Saturday afternoon's plans were sorted out when a young Italian woman seated next to me on the plane offered to show me around Museo San Marco, where she worked, for free. The 35°C heat did nothing for the headache. On Sunday, after climbing the 400 hundred steps to the top of the campanile (bell tower) of the Duomo, the massive garish pink, green and white marble cathedral that dominates the skyline of Florence, I went off to the opening workshop of the conference, in the air-conditioned comfort of the conference centre, set in part in and under Mussolini's Florence headquarters.

Bioinorganic chemistry has changed massively since the early 80's. At the 1983 meeting, at which there were around 400 attendees, most papers were on model systems for one biological system or another, and except for haemoglobin and myoglobin, most metalloenzymes had not been structurally

characterised. By 2001, the balance had shifted to the majority of papers being on metalloproteins, with a substantial amount of work being done not *in vitro*, but *in vivo* – the realm of the new area of chemical biology. Even more striking is the number of women scientists not merely in the area but at the forefront of the area of bioinorganic chemistry. Woman speakers comprised nearly a quarter of the total number of speakers, and about the same fraction of the 1200 registrants. In 1983, there were only a handful of woman among the 400 delegates present.

Feeling still headachy and overheated, I presented on Tuesday my paper on work begun by PhD graduate and Hatherton Awardee Ross Edwards and continued by Bryan Anderson of IMBS on the structural determinants of activity of iron and manganese superoxide dismutases. This work, in collaboration with Jim and Mei Whittaker of the Oregon Graduate Institute of Science and Technology, Irene Morgenstern-Badarau of the Université Paris-sud in Orsay and Ted Baker of the University of Auckland, included the structure of a mutant of manganese superoxide dismutase determined to 0.90 Å resolution. This trumped a prior presentation on Monday by a colleague who claimed that he had the biggest structure at this resolution, where all atoms including many hydrogen atoms can be individually resolved. Our ultra-high resolution structure is a little bit bigger. This session also featured work on metal-ion transport systems for copper, which now has me thinking about what systems exist



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## Geoff Jameson's Travels *continued...*

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to transport manganese into proteins.

Finally on Wednesday with colleagues from Yale and Stanford, a restaurant that served very good Italian food was located – not only the best, it was by far the cheapest. Thursday contained still more excellent science, but now barely able to climb a flight of stairs without feeling knackered, I took myself off to a doctor, who was rather alarmed at my feverish and enfeebled condition. A couple of tablets of ciproxin and a swig of expectorant later, I felt better than I had felt since leaving NZ, and finally able to get my liver in training for the visit to the MacGillivray's at the University of British Columbia. The conference dinner on Friday featured kareoke – by far the best singer of Italian love songs was a Japanese scientist, who was very good indeed – lousy food, but plenty of wine, women (well at least better than in 1983) and song.

On Saturday morning I travelled to Zürich via München (Munich) to catch up with old friends and the "boss" from when I was a research associate in Switzerland, 1979-1982 and flirted with solid-state chemistry and chemical reactions. My luggage caught up with me 10 hours later. On Sunday I travelled to Paris via Frankfurt, to finish off a paper written by Massey graduate student Julian Adams in a collaboration with the aforementioned Irene Morgenstern-Badarau. More time was spent in long lines at the lost luggage counter. This time my bag failed completely to catch up with me and was not seen again until I arrived in Washington DC. Excellent food on Sunday night, a seminar and fruitful discussion the next day, and then back to the decrepit Charles de Gaulle airport to find that the flight on United was cancelled. Five hours later, I had a hotel coupon and a single phone card, which sufficed to let one person in Washington DC know at United's expense that I was not arriving that night. Four-star hotels are nice, but short lines are very much nicer. The plane, rescheduled to leave at 9:00 am the next day, Tuesday, finally left at 2:30 pm with a pretty grumpy lot of passengers and a class action suit being organised by one passenger against United Airlines. At last my bag and I were reunited, when, an hour after arrival in Washington DC, my bag arrived on a Lufthansa flight, the airline

that had twice lost my bag in Europe. After a shower I finally could emerge from the fog of deodorant that is needed after wearing the same clothes for three days.

The visit to Georgetown University, where I worked for 12 years prior to Massey, was somewhat abbreviated – at least running late to catch the plane meant my bag did not get lost a third time, as it came into the cabin with me. My brother- and father-in-law met me at the airport in Portland, Oregon – one of the more architecturally stunning airports – and we travelled down to Salem, the capital city of Oregon, a sort of overgrown Pahiataua. The next day was spent back up in the Portland area with the Whittakers at the Oregon Graduate Institute.

Now Friday and time for an incongruous international flight from USA to Canada on a little turboprop hedge hopper, but great views of the volcanoes of the Cascades. Vancouver is a beautiful dramatically situated city. I was assured by the Ross MacGillivray, who did a sabbatical in the structural biology group at Massey in 1995, that the clear sunny day was entirely representative of Vancouver in late summer, but I gather this representativeness was akin to the "representative electron density" that structural biologists like to put in papers and talks, where representative means the very best and nicest looking electron density in the rigid core of the protein molecule. After the final seminar of this trip at the University of British Columbia and a few drinks in the lab, it was time to unwind over dinner and wine. Mercifully, queues were short, the Vancouver to Los Angeles and then Los Angeles to Auckland legs were on-time. The final leg from Auckland to Palmerston North was in the company of Gill Norris of IMBS, who was returning from a low-stress holiday in Fiji. I returned Monday morning, straight back to class, and just before the attacks on the World Trade Center and the Pentagon, which make the hassles of my trip pale into utter insignificance.

I am very grateful to the organisers of ICBIC-10 for support to attend and to my friends and colleagues for their very generous hospitality on this trip.

*Geoff Jameson*

# Research Funding Opportunities

## Royal Society of New Zealand

### *James Cook Research Fellowships 2002*

The above awards are made to senior researchers who are recognised leaders in their respective fields, have the requisite qualifications and experience, and are able to demonstrate that they have achieved national and international recognition in their areas of scientific or technological research. Applications are currently sought in the following research categories: Biological sciences; Physical sciences (including chemical, mathematical, information and geosciences); Research of relevance to the peoples of New Zealand and/or the South-West Pacific. The normal term of the fellowship is two years and the usual stipend is at a rate equivalent to an Associate Professor in a New Zealand university. Tenure shall commence on the date on which the Fellow enters upon his/her programme of research.

**ELEVEN (11)** copies of the application must be forwarded to Research Services by **TUESDAY, 30 OCTOBER 2001** for University authorisation and dispatch.

## Health Research Council of New Zealand (HRC)

### *Sir Charles Hercus Health Research Fellowship*

The above fellowship is intended to provide support for an outstanding emerging researcher who has completed a post-doctoral fellowship in New Zealand or overseas and who wishes to establish a career in health research within New Zealand as an independent researcher. In addition to an appropriate salary, the recipient will be provided with a strategic development contract, valued at up to \$100,000 (fully costed), which can contribute funds for research materials and expenses for up to four years. Further information, full guidelines and application forms can be downloaded from the HRC's web site at the following address: <http://www.hrc.govt.nz/awdHercus.htm>

**TWELVE (12)** copies of the application must be lodged with Research Services by the internal closing date of **MONDAY, 29 OCTOBER 2001** for University authorisation and dispatch.

