



# Society of Crystallographers in Australia and New Zealand SCANZ

## Newsletters

### No 50, November 01

The SCANZ homepage is located at <http://www.sca.asn.au>

## FROM THE PRESIDENT

I feel I must apologise in advance for what will appear a rather political column. Although there is a great deal that we can be pleased about in recent months (for example, increased ARC funding and announcements regarding a synchrotron in Victoria), in my opinion there is still much that is wrong with the foundations of Australian science. In advance of the next federal election we should all be informing ourselves about the issues affecting science and technology, and especially about what is being done in some quarters to highlight and to address them.



As is customary, my term as SCANZ President commenced at a Crystal meeting, in this case the excellent and highly enjoyable winter meeting organised by Jenny Martin and her team of helpers at Couran Cove Resort on South Stradbroke Island. My warmest congratulations to all involved in the organisation and running of that meeting! It was not only a scientific success, with an excellent and varied program complemented by trade displays, but importantly it received substantial sponsorship (special thanks to Alison Edwards).

This *Newsletter* includes reports from student recipients of 1987 Maslen Travel Awards, and they convey many aspects of the Crystal 22 experience. One comment (from René Macquart) deserves emphasis; there was indeed a dearth of oral presentations by students. I am a firm believer that Crystal meetings are ideal venues for our students to cut their teeth on scientific talks - to not only see how it is done, but to learn how to do it themselves - and I sincerely hope that more will take advantage of the opportunity at Crystal 23 in 2003.

Only a week after the end of Crystal 22, I was prompted by an e-mail from FASTS to attend the Science Meets Parliament Day in Canberra, August 21-22. Organised by FASTS, this was the third year for this important event, which seeks to create a dialogue between the research community and the nation's leaders. No other group in Australia commands the attention of two thirds of all Parliamentarians by organising individual meetings in one day like this, and it is quite clear that the event is highly successful and indeed highly regarded by federal politicians. The timetable included lunch at the National Press Club with an address by Peter Wills, the new Chairman of the ARC (see [www.fast.org/site/SP\\_WillsNPC\\_01.htm](http://www.fast.org/site/SP_WillsNPC_01.htm)), followed by several hours of briefing and a reception at Parliament House in the evening. Several hours of briefing seemed rather a lot, but it included panel discussions with three parliamentarians, another with two Ministerial Chiefs of Staff, and a final address by Robin Batterham. All were extremely useful and informative and Robin Batterham was truly impressive.

The actual meetings with parliamentarians took place on the following morning. Scientists were typically paired well in advance and allocated times for face-to-face meetings with two different parliamentarians in their offices. I found these meetings to be a revelation. I met with The Hon. Ian Causley

(Member for Page in northern NSW) and Mr Garry Nehl (Deputy Speaker and Member for Cowper in northern NSW). We had been briefed on four main points on which to focus, and even how to present them (in summary, be an enthusiast!). Of course, the meetings went beyond the nominated topics, and well beyond the allocated time of 30 minutes. Both members I met were well informed, interested in what we had to say and, perhaps not surprisingly, unaware of some of the issues (such as inequitable HECS liabilities for science vs other teachers). Details of the FASTS' policies for the 2002 federal election, especially the "four big issues" which formed the focus of the event, can be found at [www.fast.org/site/POelect01.htm](http://www.fast.org/site/POelect01.htm). I urge all SCANZ members to read this material and to become increasingly active in promoting the importance of science and technology issues in the future. In particular, more SCANZ members should consider attending Science Meets Parliament in 2003.

In his report from the National Committee in this *Newsletter*, John White mentions the joint press release on September 20 by the RACI, AIP, Australian Mathematical Sciences Council and IEAust. This event was aimed at raising awareness of the serious decline in staff and student numbers in the so-called hard sciences (mathematics, physics and chemistry), something which will inevitably undermine any Australian politician's plans for a high-tech future of biotechnology, nano-technology and photonics.

The event received coverage in major newspapers on September 21, as well as the ABC's News in Science ([www.abc.net.au/science/news/stories/s371514.htm](http://www.abc.net.au/science/news/stories/s371514.htm)). Full details can be found at [www.aip.org.au/initiative2001/](http://www.aip.org.au/initiative2001/) and this should also be required reading.

Finally, I had the good fortune at the National Press Club Luncheon to sit beside Alex Reisner, and had a very stimulating discussion with him. Alex is an American who has worked in Molecular Biology and Biophysics in both universities and CSIRO. He is presently editor of "The Funneled Web" ([www.the-funneled-web.com](http://www.the-funneled-web.com)) which was set up as an information point on issues such as the approaches of various countries - especially Australia - to science, technology and education. Please take the time to access this site and browse the material he has provided. It is highly informative, sometimes provocative, but of considerable importance if you wish to keep informed and abreast of these issues.

*Mark Spackman*

## **REPORT from the Past President**

Just as Max Taylor said in his President's report in Thredbo, my own term as President also seems to have passed rather quickly. In fact my term has been something just less than 18 months. This resulted directly from the decision at the Thredbo meeting to try to get our *Society* meetings back on a cycle of less than 2 years, which had been difficult to arrange in recent times with both the IUCr and the AsCA meetings cycling every three years. Nevertheless, quite a few things have happened in this short period and I have tried to keep members up to date with reports in the *SCANZ Newsletter*.

During the first few hours of my term of office, at the conference dinner in Thredbo, the *Society* paid tribute to Hans Freeman by making him an honorary life member of the *Society*. I think it was at my very first meeting of SCA when Hans was President that he presided over the establishment of the SCA constitution. I still have a mental picture of him 'selling' each of the constitutional articles rather in the fashion of an auctioneer. We all have much to thank him for.

One significant event that has occurred was that the original name of the Society (SCA) was changed in May last year to our new name of the Society of Crystallographers in Australia and New Zealand (SCANZ). This followed a ballot of members in which support for the change was overwhelming. I would like to thank Brendan Kennedy for organising this poll and Edward Tiekink for carrying out the necessary legal paperwork to facilitate the change. Edward, the Society's Public Officer, is shortly to leave Australia so must relinquish this rôle, but Alan Pring has kindly agreed to take over. The Public Officer must be a member of the *Society* who is resident in South Australia. It is of concern that there are very few South Australian members at present and it might be a useful task for the new Council to look into the possibility of transferring our 'Incorporation' from South Australia to one of the more populous States.

The year has also seen developments both in the progress towards the building of the new research reactor at Lucas Heights and the possibility of Australia getting its own synchrotron. Both of these events, which are of prime importance to our membership, still have some way to go before we can be certain of a secure future for them, but I think that at least there is a strong feeling of optimism in the air that has been distinctly lacking in recent years.

On the issue of the new reactor, I undertook with the help of the other members of the Council to make a submission on behalf of SCANZ to the Senate Committee for an inquiry into the contract for the new reactor. As a result of the written submission, I was invited to appear before the Committee, which I did in October last year. This was the first time I had had face to face contact with real politicians, so was something of an eye-opener for me. I must admit that I was not very impressed. Of the seven members of the Committee, one was absent, one was supposed to be present by video link but this broke down, one received a phone call a few minutes into the meeting and disappeared, and of the remaining members only two took any real active part. The most important of these, the chairman Senator Forshaw, clearly had an agenda of his own to pursue.

We have heard in this meeting how the Queensland Government seems to be on-side in terms of providing funding for science and biotechnology in particular, but I don't yet detect that there is the same commitment from the Federal Government and with a federal election in the offing, the next 12 months could be critical for many of us.

Finally, I would like to thank all the members of Council, and our Secretary and Treasurer in particular, for their help during the last eighteen months, and once again to thank Jenny Martin and her team for the work they put into organising this meeting so successfully.

Richard Welberry

*Crystal 22*

*Couran Cove*

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## SUBSCRIPTIONS

The Treasurer wishes to remind members that annual membership dues for 2002 are to be paid by December 31, 2002. A statement is included with this issue of the *Newsletter*. The amount payable is \$130 for a corporate member, \$25 for a full member and \$7 for a student member, with these discounted to \$100, \$20 and \$5 respectively if payment is made by April 1, 2002. Members who are over 60 years of age at the time subscriptions are due can elect to become Life Members of the *Society* by paying a one-off amount of five times the current (discounted) subscription rate (i.e. \$100).

## Crystal 22 Reports

I was surprised upon first setting foot on South Stradbroke Island at the number of wallabies about the place. Morning and afternoon teas were spent on the boardwalk watching them munch away at the grass at the foot of the lagoon that splayed out before the conference centre. The evening walks back to our cabins were divided between spying the nocturnal wildlife at ground level and gazing at the stars and the occasional planet in the clear night skies.

Crystal 22 was a who's who of crystallography in Australia and New Zealand and at the welcome reception all the names I had heard of were matched with faces and, as the conference progressed, also with personalities.

The conference started with some heartening news of the Queensland Government's commitment to spend big in the biotechnology field and on the fruition of developments to build Australia's first synchrotron. The importance of this facility was highlighted in the amount of work presented that was dependent on synchrotron radiation.

The advances presented in the technical sessions were astounding, in particular the diffractometers that can collect a data set in a fraction of the time it takes for the ones currently in use. The recently released Mercury programme from the CCDC will make life easier for those of us interested in intermolecular contacts. Alison Edwards' talk on mounting troublesome crystals was brief and effective in describing this clever method.

Many of the contributions were enthralling as they presented fields of work new to me such as Hirshfeld surfaces and their use in examining intermolecular contacts, quasi-crystals and much of the work on structural biology. The use of powder diffraction to elucidate crystal structures and the loss of water from DNA crystals to give new structures grabbed my attention during the poster session on Sunday night.

It was reassuring to see so many other students at the conference and I was impressed by the calibre of the work that each presented. The Australian Journal of Chemistry awarded the most deserving with subscriptions and cash prizes and it was a good bit of publicity for the 'new look' journal.

On our lengthy afternoon off we cycled from one end of the resort to the other, investigating all the idyllic scenery. The day was capped off with a well-catered dinner by the beach to which we travelled via the 'trains'.

At every turn the organisers pampered us and made sure we were well looked after and I would like to thank SCANZ for providing me with a student scholarship to attend the conference and the organisers for allowing me to present my work at Crystal 22.

Susan Lorenzo

*University of New South Wales*

## 2

First and foremost I would like to sincerely thank SCANZ for their generous financial support through the 1987 E.N. Maslen Travel Scholarship. From my experience, this is the only organisation that actively assists students in attending such vital conferences. This type of opportunity is vital, as it facilitates networking, which can only be a positive thing for our small but enthusiastic crystallography community.

Scientifically, the highlights were numerous. I was most affected by Mark von Itzstein's *Drug Discovery and the Sunshine State*. From his presentation I got the feeling there is a real focus on research

and development in that state, something well worth knowing, as I am almost at the end my "scientific apprenticeship". Presentations from the Spackman research group were quite stimulating, especially *Fingerprinting Intermolecular Interactions in Molecular Crystals* by Joshua McKinnon. I also enjoyed those presentations that dealt with structural genomics, namely *Practical Aspects of Structural Genomics* by Janet Newman. The Conference Lecture *Structural Genomics: A Foundation for Functional Genomics and for 'Fold Phylogeny'* given by our visitor from Berkeley, Sung-Hou Kim opened my eyes to the immense possibilities and challenges faced by all scientists. The overall program was thoroughly diverse and interesting, and all due credit should go to the organising committee for all of their hard work.

I was lucky enough to be presenting a poster during this conference. The posters that especially caught my attention were *Co-ordination Networks Constructed from Dicyanamide and various N-Heterocycles* and *Structural Comparison of the S-Adenosylmethionine-Dependent Methyltransferases*. I enjoyed being part of this because it gave me the chance to meet many new people and to get re-acquainted with others I had met at Crystal 21 held at Thredbo. I was also amazed by the CCDC trade display situated next to my poster. The new programs being demonstrated were much more user friendly and I know that I will be using it as an important search tool when it comes time to write my thesis.

Socially, I could not have asked for a much more. The resort location was nice and well equipped for the conference set-up in the Olympic Room. I quite enjoyed the Welcome Reception and the Farewell Lunch but of course the highlight of the social events was the conference dinner on Monday night. The 'train ride' to and from the venue was fun, and we even managed to have a sing-along on the way back. During the free time I hired a bike and rode along many tracks scattered over the island and then finally ending the day with a relaxing walk along the beach.

I was glad to have the opportunity to attend this conference; this was the last one for me as a PhD student. I look forward to attending another in the near future.

*Marisa Spiniello*

University of Melbourne

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Whoever thought of hosting Crystal 22 on sunny South Stradbroke Island in the middle of winter is a genius. Great weather, swanky facilities, good food, interesting scenery and fresh air. All the things you need to set the scene for yet another fabulous SCANZ meeting.

Right off the bat, let me say that I thought the poster session was particularly good this year. Not only was the content, on the whole, thought provoking but also the presentation, especially in the case of the student posters, was something to admire. Thanks to the sponsors for putting on such excellent welcome and departure meals along with all the morning and afternoon teas and a special thanks to Philips Analytical for the nifty key rings with the LEDs. I don't suppose they'd be willing to bring along a few free samples of their new X'Celerator X-ray detectors next time around and generate even more goodwill?

The talks were their usual solid selves with Andrew Whitten's presentation being a particularly enjoyable highlight. My only gripe regarding the conference was the dearth of student talks compared to previous years. If anything, the excellent standard of the posters only served to emphasise the quality of talent out there. It is a shame more students did not take the opportunity to give oral presentations.

Thanks also to Dr Alison Green for the liberal distribution of the re-launched Australian Journal of Chemistry. The new broader scope is certainly a reason to rejoice. And, in a complete non sequitur, it's a pity about the choice of location for the synchrotron. I guess we will have to dress warmly.

Thanks to SCANZ and the 'E.N. (Ted) Maslen' Studentship scheme for the wherewithal to attend Crystal 22 and all for the price of a poster/talk, - definitely a bargain.

Rene Macquart

*University of Sydney*

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I would firstly like to thank SCANZ for providing me with a Maslen Scholarship, which has helped me to attend my first crystallography conference, Crystal 22.

The conference, held at Couran Cove resort on South Stradbroke Island, was a fantastic experience for me. As an inorganic/supramolecular chemistry PhD student who is learning to use crystallography to determine the structures of metal complexes, the conference was a real eye-opener. I think the most exciting aspect was hearing about the great diversity of areas to which crystallography is applied. The conference program covered such a wide range of applications including biotechnology, supramolecular chemistry and materials science.

Highlights of the scientific program included Professor Kim's Conference Lecture on Structural Genomics. Having little background knowledge in this area I was intrigued to find out how crystallography can be used as a tool in the determination of functionality of genes. The Intermolecular Interactions session, in particular Trevor Hambley's presentation on the selective interactions between cisplatin and DNA, were also very interesting. The poster session was a great opportunity to see the work of other crystallographers in particular the other student delegates.

Breaks from the scientific program gave us an opportunity to partake in some of the resort's many and varied activities. After hiring a bike we spent a few hours riding around the island admiring its beauty and wildlife especially the wallabies that gathered around the beach at sunset. The Conference Dinner at the surf beach was most enjoyable with Judge Bevan's entertaining jokes and stories about the days of the Bush Crystallographers.

Overall I must say that I thoroughly enjoyed the conference, not only was scientific program inspiring but the atmosphere was friendly and relaxed. Thanks again to SCANZ for the opportunity to attend.

Vanessa Russell

University of New South Wales

## **NEW MEMBERS**

SCANZ welcomes the following new members for 2001.

Full members: Dr Brett Hunter (ANSTO, N.S.W), Dr Paul Bernhardt (Department of Chemistry, University of Queensland), Ms Christine Gee, Dr Fiona McMillan and Dr Begona Heras (Institute of Molecular Biosciences, University of Queensland), Dr Luke Guddat and Dr Ying-Mei Qi (Department of Biochemistry and Molecular Biology, University of Queensland), Dr Matthias Honal (Research School of Chemistry, ANU), A/Prof. Alasdair McDowall (Centre for Microscopy and Microanalysis, University of Queensland), Dr Galina Polekhina (St. Vincents Inst. of Medical Research), Prof. George Clark (Department of Chemistry, University of Auckland), Dr Sally Brooker (Department of Chemistry, University of Otago).

Student members: Ms Julia Archbold and Miss Catherine Latham (Institute of Molecular Biosciences,

University of Queensland), Ms Lucy Jankov (School of Physics, University of N.S.W.), Mr Mathew Smith and Mr Stuart Leary (Department of Chemistry, James Cook Univ. of North Qld.), Miss Carmel Walsh (Department of Biochemistry, University of Queensland), Mr David Price (Department of Chemistry, Monash University), Ms Weenawan Somphon (School of Chemistry, Suranaree University of Technology, Thailand).

## MASLEN SCHOLASHIPS

Julian Vivian (University of WA) and Rosalie Hocking (University of Sydney) have received Maslen Travel Scholarships to enable them attend AsCA'01 in Bangalore:

## TREASURER'S REPORT

### Couran Cove 2001

As has been the case in previous Treasurer's Reports, the *Society's* accounts for the seventeen months since the last meeting in Thredbo show a growth in the funds at a level well above inflation. The organizers of Crystal 21 have returned a substantial profit from that meeting boosting the accounts by an amount of \$1369.24.

As I mentioned in my previous report, one of the major disadvantages of these meetings is that they are held about every 18 months while the *Society's* income and expenditure tends to be on an annual basis. Thus there tends to be some apparent aberrations in the income and expenditure. However in this report, although the interest from term deposits is for the seventeen-month period, subscriptions and most of the expenditure is as expected for 1 year.

An examination of the balance sheet shows that the income includes not only the profit from the Crystal 21 meeting but also support from the 1987 Fund for repayment of the Maslen Scholarships (\$2110) and support for the speaker, Prof. Dorset, to attend the conference (\$1900).

The major expenses, as in previous reports, have been the cost of producing and posting the *Society's Newsletter* (\$1500) and membership of FASTS (\$775) and AsCA (\$240). It is expected that the deposit for Crystal 22 (\$4500) will be repaid by the organisers of the meeting and the \$2000 for Maslen Scholarships to assist students attend will be reimbursed by the 1987 Fund. Minor amounts of \$36 were paid to Edward Tiekink to assist in the *Society's* change of name and \$187 to Alison Edwards for expenses in attending the Science Meets Parliament Day.

A high proportion of the total *Society's* funds (about 35-40% of the \$400,000 total including the 1987 Fund) are held in cash reserves. This consists of about \$77,000 in SCANZ term deposits and about \$75,000 from the 1987 Fund in Macquarie cash management funds). It might be a good time to attempt to obtain higher returns by investing some of these funds into higher earning investments such as shares or managed funds.

*Brian Skelton*

*Couran Cove*

**LOCATION OF FUNDS**

Most of the funds are deposited in Unicredit (WA) account No. 25403 as a working account S1 or as term deposits in an I20 or I2 account. These term deposits and the investment with the Australian Guarantee Corporation are earning 4.50% interest or better.

<b>Unicredit Amount</b>	<b>Account Type</b>	<b>Interest</b>	<b>Jan 2000</b>	<b>Jun 2001</b>
	S1 Working Account	0	1993.18	4909.60
	I20 Term Deposit	4.50%	42679.89	45395.53
	I2 Term Deposit	6.50%	12495.00	13113.89
	Unicredit Total		57168.07	63419.02
	Australian Guarantee Corporation (12 month Debenture)	5.05%	14000.00	14000.00
	<b>Total</b>		<b>\$71168.07</b>	<b>\$77419.02</b>

**STATEMENT OF SCANZ**

<b>Income</b>	<b>Oct 1998- Jan 2000</b>	<b>Feb 2000- June 2001</b>
Membership	4523.77	3258.00
Interest	3652.25	4872.53
1987 Fund Support for IUCr (Glasgow)	15000.00	-
1987 Fund Support for Crystal 21	-	4000.00



Crystal 21 return	-	3369.24
Advertising (Shimadzu)	500.00	-
	-	-
<b>Total</b>	<b>\$23676.02</b>	<b>\$15499.77</b>

<b>Expenditure</b>	<b>Oct 1998- Jan 2000</b>	<b>Feb 2000- June 2001</b>
Scholarships for IUCr <sup>1</sup>	15000.00	-
Fasts membership	634.50	775.00
AsCA membership	720.00	240.00
Newsletter Costs	1500.00	1500.00
Crystal 21 Deposit	2000.00	-
Crystal 22 Deposit	-	4500.00
Crystal 21 <sup>2</sup> Scholarships	2110.00	-
Crystal 22 <sup>3</sup> Scholarships	-	2000.00
Ed Tiekink for change to SCANZ	-	36.00
Science Meets Parliament day	-	187.00
Advertising (Shimadzu)	75.00	-
State Government Tax	31.80	10.82
Miscellaneous	2.50	-
<b>Total</b>	<b>\$22073.80</b>	<b>\$9248.82</b>
<b>Profit</b>	<b>\$1602.22</b>	<b>\$6250.95</b>

**Note 1.**

The Maslen Travel awards of \$1875 for students to attend IUCr (Glasgow) were made to:

Kia Wallwork, Jean Kim, Elisabeth Fletcher, Neil Somers, Josh McKinnon, Nick O'Toole, Jennifer Forrester, and Philip Nakashima.

**Note 2.**

The Maslen Travel awards for students to attend Crystal 21 in Thredbo were made to:

1. Connie Darmanin	\$215	6. Rene Macquart	\$215
2. Marisa Spiniello	\$215	7. Brett Pool	\$215
3. Neil Somers	\$495	8. Philip Nakashima	\$495
4. Kevin Lim	\$495	9. Jeremy Ruggles	\$150
5. Jean Kim	\$215		

**Note 3.**

The Maslen Travel awards of \$500 for students to attend Crystal 22 in Couran Cove were made to:

Susan Lorenzo, Vanessa Russell, Rene Macquart and Marisa Spiniello.

**1987 FUND REPORT**

Another of the trustees, Jim Graham, regrettably passed away earlier in 2001; as the convolutions caused by such events and the name change to SCANZ still entail complex ramifications, it is suggested that the lot of the existing trustees be ameliorated by the (local) appointment as replacement of Brian Skelton, who has given excellent recent service as Treasurer. A letter by the Executive confirming this is required, also a letter confirming the SCA/SCANZ name change, accompanied by a copy of the new certificate of incorporation.

The fund continues to do well and has incremented by \$100,000 since the previous report at Thredbo in January 2000.

**1987 Fund**

(at 28/6/2001)

No. shares	ASX Code	Name	Cent/share	Value \$
7625	ING	ING Industrial Units*	145	11,056
7600	BRS	Bristle	200	15,200
649	CBA	Commonwealth Bank	3325	21,579
2000	CSL	Commonwealth Serum	4710	94,200
15730	FCL	Futuris	245	38,539
1127	SGW	Sons of Gwalia	925	10,425
9376	WFT	Westfield Trust	330	30,941
1500	WOW	Woolworths	1075	16,125
		Macquarie Cash management		75,229
		<b>Total</b>		<b>\$313,294</b>
		(cf 14/1/2000		\$209,351)

\*previously Armstrong Jones Industrial Trust; Armstrong Jones Retail Trust has been taken over and paid out since 14/1/2001

If this were conservatively invested, it would still produce a return now well in excess of current usage; in combination with the operating account, the *Society* is now worth ca \$400 K. Some consideration of the future of these funds appears in order, For example, if we were to continue to grow at this rate, becoming \$1M in 5 years time, SCANZ could fund a number of Ph.D. scholarships or similar activities from the income. There is also the possibility of members, through bequests (etc), viewing such a 'charitable trust' as an appropriate vehicle to assist the discipline for the future. What are the members' views on this?

## **THE JEFFREY AWARD**

### **CALL FOR APPLICATIONS**

A fund established in memory of George A. Jeffrey will be used to assist outstanding graduate students to attend the Congresses of the International Union of Crystallography. The first award(s) will be made at the Geneva IUCr Congress (August, 2002). Applications are invited worldwide. These must be from graduate students in good standing at the time of the Congress. Applications must include:

- A one-page letter explaining the student's background and any special circumstances in support of the application.
- Letters of recommendation from the student's mentor and from one other person familiar with the student's crystallographic abilities and background. The mentor should state the expected date for the student's graduation.
- A one-page biographical sketch of the student.
- Copies of any reprints, preprints or abstracts in which the student is an author.
- An abstract with the student as first author, which has been submitted for the program of the Geneva IUCr Congress.
- The student's e-mail address.

The original and two copies of the application (in English) should be mailed to:

Prof. Bryan Craven,

Chemistry Department,

Indiana University of Pennsylvania,

Indiana, PA 15732, USA.

It must be received no later than March 1, 2002. Applications will be judged by Profs Craven, Helen Berman (Rutgers University) and Martin Caffrey (Ohio State University). The important criteria will be the scientific excellence of the student's research, the student's financial need and the student's proficiency in English, the official language of the Congress. The Jeffrey Award will cover at least the student's registration fee and the cost of student housing.

## **NATIONAL COMMITTEE FOR CRYSTALLOGRAPHY**

I would like to inform SCANZ members about three important matters that affect the future of crystallography in Australia and New Zealand. There have been significant developments for synchrotron radiation research in Australia and in neutron scattering in our region. On 20 September 2001, a campaign

was launched in Parliament House, Canberra by the chemical, physics, mathematics and engineering societies in Australia to make clear to politicians the parlous state into which the "enabling sciences" of chemistry, physics and mathematics are falling. The National Committee has been involved in all of these and I ask SCANZ members to be active and seize the opportunities offered by the recent actions.

The recent announcement that the Australian Government, through its Major National Facilities Program, has funded the continuation of access by Australian scientists to the Photon Factory in Japan and the CARS and SRI-CAT facilities at the Advanced Photon Source, at Argonne National laboratory Chicago, provides for continuity in the growth of Australian research using synchrotrons. The proposal was funded fully at about \$A14M for the next five year period. With the new soft X-ray beamline at the Photon Factory, Australian work in surface science should have a boost and the completion this year of all the facilities on the CARS beamlines should boost our diffraction, small angle scattering and reflectometry. I particularly draw SCANZ members' attention to the SCrAPS facility being set up by Ian Gentle ([gentle@chemistry.uq.edu.au](mailto:gentle@chemistry.uq.edu.au)).

In order to maximize the benefit of having good small molecule structural characterization facilities available at ChemMatCARS, an initiative has been proposed where an experienced crystallographer would collect crystals from a number of groups and run them all together. This service would enable chemists who would be unlikely to visit the facility themselves to take advantage of its capabilities for crystals which cannot be studied on a laboratory diffractometer.

The announcement by the Victorian Government that they would provide \$A100 million towards construction of a synchrotron in Australia is to be welcomed by all. There is a long way to go to achieve a world-class facility and, of course, nothing else will do. The whole community should get behind the project. At its March 2001 meeting the Australian Synchrotron Research Board (ASRP) identified the minimum full cost of the project over ten years. This is ca \$160M to build and at least \$A90M to operate. The National Committee at its July meeting reiterated this point - that provision for the operating costs and investment to keep the facility at the cutting edge must be in the budget from the start. I attended a meeting at ESRF on 29 August between the Victorian group and ESRF Directors where this point was clearly made.

I will say little this time about neutron facilities except to congratulate Rob Robinson on the series of meetings on new instruments for the Replacement Research Reactor. Wide consultation with crystallographers, chemists, physicists and biologists is occurring and the attendances have been very strong. On another front, a major step has been taken in Japan towards their new pulsed-neutron source. Very recently, we were informed that Phase 1 of the Joint Project between JAERI and KEK on high-intensity proton accelerators was approved for construction. Although the formal approval of the budget will be made by the Diet next year, the notice from the Government at this time of the year means that Phase 1 of our project was practically approved.

John White

## CRYSTAL 23

Bookings have been made with the Cable Beach Resort in Broome to hold the Crystal 23 meeting from August 10<sup>th</sup> to the 13<sup>th</sup> 2003. It is also planned that a Biological Structure Workshop, organised by Mitchell Guss, will be run on August 14<sup>th</sup> and 15<sup>th</sup> immediately following Crystal 23. Mark Spackman also intends holding the 14th Sagamore conference (under the auspices of the IUCr Commission on Charge, Spin & Momentum Densities) after Crystal 23 and that is booked for August 14<sup>th</sup> to 19<sup>th</sup> 2003.

These arrangements promise crystallographers a feast of science in a truly special location at an optimal time of the year (dry, av. max. 30C). It has also been timed to be two weeks after the ACA meeting in the US, and one week before the ECM that will in 2003 be held in Durban, South Africa. A strong

contingent of international participants is therefore expected.

Preliminary discussions are already underway about the possibility of running an additional Asian Crystallographic Association conference in conjunction with the Crystal 23 meeting in 2003. This will be considered at the AsCA01 meeting in Bangalore. If this coupling of conferences is agreed upon, there is a strong likelihood that the IUCr Executive will hold their business meeting for 2003 in Broome during this time.

Competitive accommodation arrangements have been obtained for the main venue and several adjacent resorts. There is even cheaper accommodation in the town centre. Access to Broome is always at a premium – especially since the demise of Ansett, however, this should be sorted out well before 2003. Nevertheless, SCANZ members are advised to make their accommodation and travel arrangements for this meeting as soon as the conference web site ([www.crystal.uwa.edu.au/CrystalsDownUnder](http://www.crystal.uwa.edu.au/CrystalsDownUnder)) has been installed.

And remember that Broome is the gateway to the Kimberley Region – so it is also an opportunity for you and your family to take an expedition into this spectacular area.

*Syd Hall*

## OBITUARY

### Robert A. Sparks

1928-2001

There will be scientists all over the world who feel sadness that Bob Sparks, together with his wife Nonie, died in a recent tragic car accident.

Bob was initiated into crystallography by the late Professor Ken Trueblood at UCLA where he graduated PhD in 1958. He could tell many amusing stories about the brief period he spent as Private Sparks based in Albuquerque, New Mexico. From time to time he was relieved of mind numbing army duties, when a chauffeured staff car was dispatched from Los Alamos to collect him to come and administer much needed first aid to the mysterious Giant Brain behind whatever they were up to in post Manhattan Project days. Someone up there knew he was one of the very few computer literate people around and computers became a dominant and tightly integrated part of his career.

He and Ken Trueblood wrote one of the first full-matrix, three-dimensional, least-squares refinement programs and so played a crucial part in a trans-Atlantic collaboration, with Dorothy Hodgkin's research group in Oxford, in refining the structure of Vitamin B12 using data obtained in her laboratory. Bob spent a period in Oxford where he made valuable contacts with crystallographers such as Durward Cruickshank, the late John Rollett and Walter Hamilton each of whom went on to make lasting impressions on the methodology of our subject.

In 1963 Bob was the founding director of the Statistical and Computing Center at the University of Hawaii then he helped set up a structure solving facility inside the research laboratories of the Syntex pharmaceutical company in Palo Alto. This was spun off as Syntex Analytical Instruments, which became Nicolet then Siemens then Bruker then Bruker-Nonius down the years.

Bob's main effort was in developing robust software to control the increasingly automated processes of data acquisition and processing in X-ray structure analysis. His was one of the first successful attempts to bring all operations inside the X-ray laboratory onto mini computers (Data General). Almost all diffractometers, of every manufacturer, use the Spark's algorithm to determine the orientation matrix which best fits the spatial distribution of diffracted X-ray beams whether they were detected on four-circle instruments or on modern area detectors. For the past three years he has put a lot of effort into finding multiple orientation matrices with the same unit cell; an essential step in deconvoluting data from twinned or cracked crystals.

Ten years ago Bob and Ken Trueblood founded the Summer School of the American Crystallographic

Association. This annual two week intensive course has grown from strength to strength. Many currently practicing crystallographers, of all ages and specialties, received their introduction to the subject at these schools. Now both founders are gone but this work looks certain to continue and that is exactly what would have given them both a feeling of great satisfaction and achievement. Today there are far too few crystallographers with the absolutely reliable and comprehensive grasp of the fundamentals of the subject exhibited by Bob Sparks and his contemporaries. We are the poorer for their passing.

*Ward Robinson*

## **CRYSTAL FRAGMENTS**

The \$35,000 Minister's Prize for Achievement in Life Sciences has been awarded to Bostjan Kobe of the University of Queensland, for research in exploring the shape of basic building blocks-proteins. The Prime Minister and Minister for Industry, Science and Resources presented the 2001 Science Prizes to the winners during a dinner in the Great Hall of Parliament House on 25 September 2001.