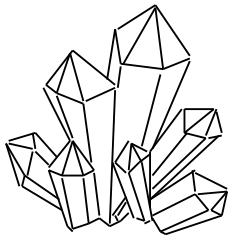
SCANZ NEWSLETTER

SOCIETY OF CRYSTALLOGRAPHERS IN AUSTRALIA AND NEW ZEALAND

No 57, January 2004



FROM THE PRESIDENT

I am honoured to be writing to you as President of this wonderful Society. It will be difficult to follow the likes of Mark Spackman, Richard Welberry, Max Taylor and Mitchell Guss to name but a few recent incumbents, but I'll do my best.

My first official pronouncement is to thank the immediate past President, Mark Spackman for his excellent leadership of this Society. Mark has handed over the reins of a very well-oiled machine and I for one appreciate that immensely (sorry about the mixed metaphor, but Joh Bjelke-Petersen has left a legacy that persists still in Queensland). I'm also counting on his wisdom and goodwill (Mark's, not Joh's) when any difficult issues arise during my term of office. Thanks in advance, Mark! In case you don't know, Mark Spackman is also the recipient of a very prestigious and highly competitive ARC Professorial Research Fellowship (2004-2008). Congratulations Mark on this very well-deserved recognition of your research excellence.

On an historic note, 2003 was the 50th anniversary of the discovery of the structure of DNA. Our *Society,* together with the Australian Academy of Sciences marked the anniversary with the release of a postcard featuring a diffraction image similar to that used in the determination of the DNA structure. If you haven't seen it yet, don't despair - a few are enclosed for you with this *Newsletter.* The postcards were distributed around Australia and New Zealand through Avant Card outlets and were very popular especially in "student-frequented and artist hangouts".

I trust that most of you saw the documentary "The Secret of Photo 51" that aired on SBS in Australia in November. This was an excellent program highlighting the life of Rosalind Franklin and her often-overlooked role in the DNA structure story. If you missed it, you can find out more about Rosalind Franklin's extraordinary though very short life in the book by Brenda Maddox "Rosalind Franklin: The Dark Lady of DNA". It is fascinating reading.

It seems only fitting that in the anniversary year of DNA structure, the 2003 Nobel prize for chemistry was awarded in part to Rod Mackinnon for crystallographic studies on ion channels which, like DNA, are fundamentally important biological molecules.

The DNA anniversary was also remembered at the Broome conferences, with a whole session dedicated to DNA and DNA:protein structures. The conferences were a huge success thanks in the main to the untiring efforts of Syd Hall and Mitchell Guss. You can read more about the Broome conferences in the student reports that follow.

2003 sees Brian Skelton ending his term as our *Society Newsletter* editor. Brian has done a fabulous job over the past 10 years and he deserves our thanks and appreciation for his hard work and dedication. Thank you Brian for doing the job so well. The new editor will be introduced in the first edition in 2004! Watch this space.

Finally, I'd like to wish you all a prosperous, happy and safe 2004.

Jenny Martin

AsCA'04

The Sixth Conference of the Asian Crystallographic Association, AsCA'04, will be held in Hong Kong at the Hong Kong University of Science and Technology from 27-30 June 2004. The committee heads are Prof. Ian Williams (Local Organising Committee) and Prof. Matt Sakata (Programme Committee).

Important dates include:

Abstract submission deadline: 15 February 2004

Early registration begins 4 January 2004

Early registration deadline: 1 April 2004

Registration Fees are $US225 ($US275 after 1 April 04) for full participants and $US125 ($US175) for student participant It is expected that most of the participants will be accommodated at the University Centre ($US50 for a single room or $US70 for a double room per night) or at student dormitories ($US25 for single occupancy or $US15 for double occupancy. Alternatively, paricipants can stay down town at the Hotel Nikko Hong Kong. A special shuttle bus services will be available from the Nikko Hotel located in downtown East Tsim Sha Tsui to takeparticipants to HKUST.

Pleanar speakers will include Prof Jun Akimitsu (Japan), Prof Shie Ming Peng (Taiwan), Prof T. P. SIngh

(India), Prof Isao Tanaka (Japan), and Dr Jian Wei Miao (USA),

Review of Australian Crystallography 2004

Currently two national infrastructure facilities with major impact on the crystallographic community are under construction or in planning phase, the Replacement Research Reactor at Lucas Heights and the Australian Synchrotron at Monash University. Members of the National Committee have been actively engaged in preparing proposals for beam-lines at these facilities and in service on the National Scientific Advisory Committees. The National Committee for Crystallography will continue to interact where appropriate with those responsible for bringing both of these new laboratories in Australia to reality.

In connection with the construction of these facilities, the availability of more and more powerful laboratory based facilities and the ongoing use by Australians of overseas facilities there is a need to appraise the current state of structural work in Australia
(in the widest sense) for advice to the Academy. The National Committee will soon be setting the terms of reference for the review and would be grateful for the input of Crystallographers and
chemists, physicists, biologists and materials scientists at this stage and throughout the review.

The terms of reference of this review are expected to include inter alia growth and complementarity to Australian based facilities in the use of overseas facilities for crystallographic experiments, changing demography of University Departments of Physics, Chemistry and Biological sciences in relation to structural science by diffraction or imaging techniques, and numbers of PhD students and young post-doctoral scientists active in our field in Australia.

A review of crystallography in Australia is especially timely with these new Australian and overseas facilities expected to become available over the next five years.

John White

REPORT FROM BROOME

In August 2003, the Society of Crystallographers in Australia and New Zealand (SCANZ) and the Asian Crystallographic Association (AsCA) held a joint conference (AsCA'03/Crystal23) at the Cable Beach resort in Broome on the far north-west coast of Australia. Two satellite meetings, a Biological structures workshop and a Sagamore meeting, were arranged to follow the joint conference. The meeting was attended by over 300 participants from around the world.

The idyllic and remote conference venue provided a welcome winter escape for Southern Hemisphere attendees and an exotic tropical destination for Northern Hemisphere participants. Cable Beach is renowned for its white sandy beaches, glorious sunsets over the water,dinosaur footprints visible only at low tide, camel rides on the sand,a crocodile park full of feisty reptiles and pearl farms full of perfect pearls. All of these were enjoyed by conference participants on the free afternoons. In addition, the unusual phenomenon of "the staircase to the moon" coincided with the conference dates. Many attendees were able to witness this rare and spectacular natural event (though it required the rare and unnatural event of delaying the time of Alwyn Jones' lecture).

Further information including registration forms can be obtained from the conference website at http://www.ust.hk/asca04.

The scientific program showcased a wide diversity of modern crystallography methods and applications. A highlight for all was the breathtaking presentation by Keiichi Namba (Japan) on the structure and motion of bacterial flagellum. Other program highlights included a session devoted to nucleic acids, in celebration of the 50th anniversary of DNA structure, and an awe-inspiring update on Riken structural genomics results by Shigeyuki Yokoyama (Japan). The 1987 Maslen Fellow was Ian Robinson (USA) and his plenary talk got the meeting off to just the right start. This was followed by a plenary lecture on fullerenes by Colin Raston (Australia). Plenary sessions by Erich Kisi (Uni Newcastle, Australia) on in situ combustion synthesis and A0 by Michiyoshi Tanaka (Japan) on electron diffraction techniques were also lauded by the audience. Workshops on twinning and modulated structures, conducted by Victor Young (USA) (who also gave a plenary lecture on merohedral twinning) and Siggy Schmid (Australia), were especially appreciated by those with problematic crystals. And an information session run by Richard Garrett (Australia) on the Australian synchrotron (to be constructed in Melbourne and due to be operational by 2007) gave everyone the opportunity to find out what is proposed for this facility.

The biological structure workshop was held over two days. Highlights included the lecture by Alwyn Jones (Sweden) on protein structure validation. An unexpected bonus for those who attended this lecture was the definition of a new unit of time, the Guss (the time taken to
flip one peptide bond during protein structure refinement - 3 months in standard measurement). A CCP4 workshop provided loads of new information, to a very appreciative audience, on data processing, molecular replacement and maximum likelihood. Two sessions on synchrotron science gave the floor to Janet Smith (USA), Paul Ellis and Aina Cohen (USA), Sine Larsen (Denmark) and Jose Varghese (Australia) and allowed the user community to consider further the features required for the Australian synchrotron.

Jenny Martin

SUBSCRIPTIONS

The Treasurer wishes to remind members that annual membership dues for 2004 are to be paid by December 31, 2004. A statement was included in the last issue of the *Newsletter*. The amount payable is $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, 2004.

Paul Carr

SCIENCE MEETS PARLIAMENT DAY

On Tuesday 14 and Wednesday 15 October this year FASTS ran another successful Science meets Parliament (SmP) day. This was the fifth such event, the first being held in 1999. The first day was taken up with a briefing on how to best approach the meetings with parliamentarians and the messages that FASTS was hoping to impart. This included lunch at the National Press Club, at which a lively debate took place between the Minister for Science, the Hon. Peter McGauran ,and the Shadow minister for Science and Research, Senator Kim Carr (http://www.fasts.org/Fsite/SmP/SciDebateTrans.doc). No less interesting was an opportunity to network with a very broad cross section of the Australian scientific community - much broader than that present at any discipline-based meeting.

The second day was taken up with meetings with parliamentarians, generally three scientists and one parliamentarian. While in some cases quite specific goals were tackled by individual delegates, in the interests of having a unified message FASTS had identified three key points which were summarised in a brochure to be handed to the parliamentarians during the meetings (http://www.fasts.org/Fsite/SmP/Issuesflyerweb.doc). The points were (1) Backing Australia's Ability is a good start but needs to be redoubled rather than simply continued; (2) The R&D tax concession should be replaced by a sliding scale which rewards larger and longer-term investment; and (3) The fall in higher education funding needs to be addressed.

From a SCANZ perspective, a small list of issues was compiled in discussions with local SCANZ members. The three issues outlined in the brochure covered many areas of concern, such as university funding, but where possible the need for Federal support for the synchrotron facility being constructed in Victoria (easily the most common issue raised by SCANZ members) was specifically put forward, as well as the need for support for scientific infrastructure in general. With two scientists from the minerals industry I met with Senator Geoff Buckland (ALP, South Australia), a former blast furnace operator in Whyalla, whose primary interest was in the minerals industry. We discussed the importance of mineralogy and by extension crystallography (and the synchrotron and also the neutron source at Lucas Heights) in minerals exploration. He acknowledged the importance of research science in developing the tools and understanding and people needed in industry. My second meeting, with Peter Dutton, MP (Queensland), failed to occur due to other commitments intruding. However we spent some time with his advisor, who was interested in the different fields each of us discussed. We met Mr Dutton long enough to shake his hand, but little else.

The event ended with the Science and Industry Dinner at Old Parliament House. At each table could be found a parliamentarian, a political staffer and an assortment of scientists, providing a useful informal opportunity to talk about science and politics. The value of such opportunities for the political and scientific spheres to meet and improve their understanding of each other was evident. It is an experience to be recommended.

This was the last SmP in their present capacities for Professor Chris Fell, President of FASTS, and Toss Gascoigne, FASTS's executive director. Professor Snow Barlow (University of Melbourne) has taken over from Professor Fell, while FASTS is currently seeking a replacement for Mr Gascoigne, who will step down in January after nine successful years in the role. He will become the inaugural director of CHASS, the Council for the Humanities, Arts and Social Sciences, a new peak body. All at SCANZ wish Toss the best of luck in his new role and thank him for his work for FASTS.

Darren Goossens
(ANU)

STUDENT REPORTS from BROOME

I recently attended the AsCA'03/Crystal-23 Conference, a joint conference of the Asian Crystallographic Association and SCANZ. This conference was the first of three meetings comprising the Broome 2003 Crystallography Meetings. Broome proved to be quite the idyllic conference destination, providing a welcome winter escape for many of the attendees, myself included. The Cable Beach setting with its kilometres of white sand and glorious sunsets certainly made for a unique break from the office & lab.

The scientific program showcased the ever-expanding diversity of modern crystallography, assisted greatly by the significant international contingent present. As an inorganic materials chemist there was a smorgasbord of small molecule crystallography to keep me busy throughout the conference. It was also refreshing to attend a number of the biological sessions, with Keiichi Namba's breathtaking plenary presentation a definite highlight.

The social program was equally good, kicking off with the poolside welcome reception and culminating with the spectacular sunset dinner just metres from Cable Beach.

I was delighted to receive the 'Crystal Engineering Communications Prize' for a student presentation on Crystal Engineering, and I look forward to making the most of the accompanying subscription.

Finally I would like to thank SCANZ for a Maslen Travel Scholarship, allowing me to attend the AsCA'03/Crystal-23 Conference.

Gregory Halder
University of Sydney

Talking Crystallography by the Beach!

Once upon a time, the most famous jewel of Broome was the pearl. Now one can add crystals to the list! In August 2003, about 300 people descended in Broome to attend the combined meeting of the Society of Crystallographers in Australia and New Zealand (SCANZ) and the Asian Crystallography Association (AsCA), with many staying on for one of the subsequent workshops. I am grateful to SCANZ for a 1987 Maslen Scholarship towards the attendance of the AsCA/SCANZ meeting plus the Biological Workshop.

The amalgamation of the regional meetings bolstered the breadth and depth of the work presented at the conferences. Several research groups have amazed us with their feat and the financial resources available for their work. Dr. Keiichi Namba, together with his colleagues in Nan Machine Project, Japan, sought to elucidate the sequence of molecular motion in bacterial flagellum using a combination of protein crystallography, fibre diffraction and electron cryo-microscopy. He described the intricate yet co-ordinated movements of proteins required to drive the flagellum, and treated the audience to a most professional computer animation of flagellar motion. On a smaller – but no less impressive – scale, Dr. Wah Chiu illustrated how protein crystallography can complement electron cryo-microscopy in reconstructing the structure of the caspid of herpes simplex virus. Dr. Chiu also gave a quick introduction of electron cryo-microscopy, to the benefit of novices.

Many other talks at the AsCA/SCANZ meeting addressed different aspects of biology, from DNA binding to cell signalling and metabolism, in a variety of organisms via the study of protein structure. As structural information accumulates in many families of proteins, researchers can now use bioinformatics to correlate the type of substrates with liganding residues within those families (Dr. William Duax), or even make predictions based on the correlations (Dr. Bostjan Kobe). In contrast, structural genomics teams face the challenge to understand the functioning of individual proteins from their structures. In some cases, clues may be inferred from unexpectedly bound substrates (Dr. Edward Baker) but alternative approaches are clearly needed.

A more serious bottleneck for structural genomics programmes, and indeed structural biology in general, is the abundant production of soluble proteins. Having made his mark at the Lorne Protein Conference 2001 with his talk on the RIKEN structural genomics projects, Prof. Shigeyuki Yokoyama returned to Australia for a 'sequel' and filled us in on the practical details of cell-free expression. This *in vitro* system can be adapted to a 96-well format for expression screening, and the optimal condition can be standardised easily for automation.

With the Australian synchrotron due in 4 years' time, there was great interest among the Australian audience to learn about beam line development from expertise abroad. Dr. Janet Smith from the APS and Dr. Paul Ellis of the SSRL advocated the minimisation of human intervention, for example in the preliminary procedures of MAD experiments. In the future, other tedious jobs such as mounting crystals could be automated as well, as Dr. Paul Ellis demonstrated. User comfort at the synchrotron is just as important as convenience, since working there is often long and tiring. The work areas at CASSIOPEIA in Sweden, presented by Dr. Sine Larsen, certainly looked cosy and stylish just like Ikea show rooms! Afterwards, Dr. Jose Varghese outlined the technical specifications and capabilities of the two protein crystallography beam lines at the Australian synchrotron. The audience and speakers were then engaged in a keen discussion as to what those beam lines should strive for.

I apologise that I cannot do justice to the many other high quality presentations in this short report, but I am glad that I have attended them all. The conferences were also a good time to catch up with and meet other scientists, young and senior. I had helpful discussions of my work with the so many experts there. Many of us students would have also relished the time at the beautiful Cable Beach and a short holiday in the name of work! Once again, I wish to thank the organisers of the conferences and SCANZ for their generous financial support to the students.

Geoffrey Kwai-Wai Kong
St. Vincent's Institute, Melbourne and
The University of Melbourne

Crystals grow larger after Broome

The Maslen Travel Scholarship gave me the opportunity to attend, for the first time, one of the best international crystallography meetings that this year was held in Broome. For this I sincerely thank SCANZ and the organizers. The scientific program for AsCA'03/Crystal23 and meeting the participants was amazing. How often do we read journals, articles with extraordinary work and wonder what would it be like to meet the authors in person. Well, this time it happened to me. Although I must admit that I consider myself a toddler in crystallography, listening to the work and results of fine crystallographers made a lot of issues much clearer and now made my work even more enjoyable.

Going back to Broome, the fantastic organisation, choice of location, and the weather that I am sure was also booked with the "higher powers" by the organizers made this event unforgettable. Adding to this, being honoured to speak at the Structural Biology Workshop and to share our work with others, allowed me to pick up invaluable

hints and suggestions from experienced scientists and also from fellow students. The poster session and one-on-one discussion with the authors provided me with many useful ideas that I am already employing in my work.

And yes, it is true, the crystals grow larger after Broome, but this work hopefully I will be able to present at our next meeting…

Once again THANK YOU.

Pawel Listwan
Department of Biochemistry and Molecular Biology
University of Queensland.

Crystallography Spectacular

This was the first conference that I have attended and as limited as my experience is of these matters, I believe that it was a very well structured conference with very good content. I enjoyed the variety and the flexibility of the presentations and of course the location of the meeting was not too depressing.

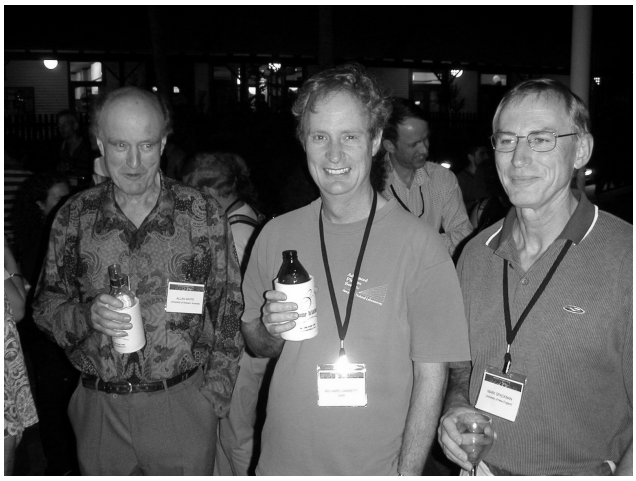
As would be expected, I attended the structural biology sessions for the most part, though did sit in on a small molecule talk on neutron diffraction and combustion synthesis, which I found interesting. It was even a little bit depressing to learn of the Structural Genomics project at Riken in Japan, which has a very high throughput of protein structures. I do however appreciate the value of the more intensive level of study that groups such as ours apply to our target proteins (and the funding differences also).

The student presentations were for the most part well done, with the high light of course being Julian Vivian's talk on RTP. Though it was difficult at times understanding some of the accents, it was useful to see first of all what sort of projects other students have and secondly what is expected of us when giving presentations at science meetings such as these. A standout presentation for me was one on the Wednesday afternoon about an organophosphate-degrading enzyme involved in Bioremediation. This was particularly interesting because it has some parallels to my own project, which is also focused on Bioremediation, though on halogenated organic acids.

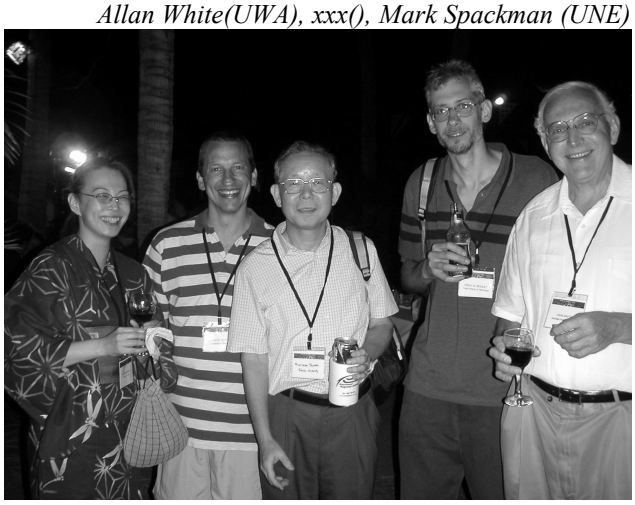
The biological workshop was also quite informative. From learning of some of the more useful application of the CCP4 program suite to furthering my understanding of how maximum likelihood works. Furthermore, Alwyn Jones' talk on O was certainly a highlight of the meeting, though I gave up a viewing of the staircase to the moon to attend it. It was very worth it, as was the meeting as a whole.

I would like to take this opportunity to thank SCANZ for providing funding for this conference. Also to AsCA and IUCR for the organization of the meeting.

Jason Schmidberger



Allan White(UWA), xxx(), Mark Spackman (UNE)



Sun, Sand, Surf and…Conference??

Cable Beach Club Resort was the perfect setting for AsCA 03. Sun, surf, sand, cocktails - and yes, the talks. What more could you want? All of the above were exceptional. I'll start with the sun – think hot balmy days, averaging 30 ºC for the daytime temperature. Of course, there was that one memorable day of almost torrential rain – the first time there was rainfall in Broome in about four months, I was told by the locals (somewhat accusingly). They seemed to think the arrival of the crystal crew was tantamount to a rain dance. The hot weather triggered a mad rush to the beach on almost every day, where the only tough decision was whether to sit in the nudist section or not (depending on how many accompanying males were present). Killer box jellyfish and one near death experience with an octopus aside, the water was warm, the sand was hot and the cocktails by the beach remarkably refreshing. So with this much relaxation, was there trouble getting jellified minds and bodies back to the talks? Yes there was – but the effort was worth it. The general quality of oral and poster presentations was excellent, and in some cases, quite frightening in terms of the quantity of structures obtained (from the Riken High Throughput Factory). My favourite structures were the T7 RNA polymerase elongation complex and flagellar

component proteins, the presentations of which got the gastric juices in a right twist (jealousy or indigestion, I'm not sure which). The CCP4 workshop (data processing and scaling with Mosflm and Scala) was a useful though fear-inducing exercise when I realized what was awaiting me back home. One of the best parts of this conference was to finally recognize some of the crystallographers I had heard about. All in all, I thoroughly enjoyed this conference (best conference ever tag in the making) in terms of both venue and educational content. A huge thank you to SCANZ and AsCA for providing the student funding that helped me attend the conference, and to Syd Hall, Mark Spackman and Mitchell Guss for their wonderful organizational effort.

Roopwant Judge
UWA

Camels, Sand and Crystallography

Once again the keen and exciting crystallographers around the world gathered to enlighten us with their new discoveries in the realm of crystallography. There were many presentations and in particular I enjoyed the session on "Nucleic acids and their protein complexes". I was also very impressed with the Japanese presenters and their extensive contribution towards structural genomics.

In addition Broome was the ideal location to make bearable some of the not so interesting or "dull" talks. The beautiful weather, the ocean, the food and of course the "Afghan camels" provided a stairway to heaven.

For me one of the highlights of the conference was the poster session. It provided me with an opportunity to meet fellow crystallographers and gave me a chance to talk about my research. I received many positive comments on my poster that were very stimulating.

To conclude I would like to sincerely thank SCANZ for the scholarship that allowed me to attend my first crystallography conference. It was a rare opportunity for me to meet renowned crystallographers and I hope to be given the chance to attend many more conferences in the future.

Mahjooba Sidiqui
UWA

Swept away by Broome 2003

First and foremost I would like to thank the SCANZ for awarding me a Ted Maslen Travelling Scholarship to attend the combined AsCA'03/Crystal-23 meetings and the Biological Structure Workshop in Broome.

It would be an injustice to go any further into this tale without mentioning the location. It was simply mind-blowing. The conference centre was directly opposite the stunning Cable Beach. The weather was bright and sunny. Malcom Douglas' Crocodile Park was just up the road (and is well worth a visit for anyone in town). We were also lucky enough to be in Broome for the 'Staircase to the Moon'; a spectacular celestial display that is caused by the full moon rising over long mud flats near the main town of Broome.

The science presented in all of the talks was really of the highest quality. This was especially true during the Biological Structure Workshop, where I got to see some of the leaders of my field give extremely interesting talks. I was even witness to Alwyn Jones defining a new unit of measure in protein crystallography (the 'Guss'). However, my highlight talk for the meeting was not during the Biological Structure Workshop. It was actually the talk given by Dr Erich Kisi from The University of Newcastle on "Ultra-high speed neutron diffraction studies: combustion synthesis of Ti3SiC2 and related compounds". I had never previously appreciated what materials scientists studied or why. I found Dr Kisi's talk a really good introduction into this interesting field.

Stephen Graham
University of Sydney

Staircase to Crystallography

I would like to express my gratitude towards SCANZ for the provision of a 1987 Maslen scholarship, which facilitated my participation at AsCA'03 / Crystal-23 the joint conference of the Asian Crystallographic Association and the Society of Crystallographers in Australia and New Zealand held in Broome, Western Australia.

As a young crystallographer, this conference provided a valuable learning experience, expanding my appreciation of crystallographic techniques and applications beyond the scope of my previous experiences in small molecules x-ray and neutron diffraction. I was captivated by striking electron diffraction patterns, blown away by Erich Kisi's in-situ combustion syntheses, and astonished by the capabilities of protein crystallography shown in Keiichi Nambas's work on bacterial flagellum, which demonstrated with such clarity the important bridge between molecular structure and observable functionality.

The crystallographic workshops on twinning and modulated structures, conducted by Victor Young and Siggy Schmid, were a particularly instructive aspect of the conference program, providing an understanding of and a structured approach to solving these 'problem' structures that might otherwise be consigned to the 'too hard' basket.

Indeed, I have since started to re-examine a modulated structure that has waited patiently on my computer for many months.

A personal highlight was my first oral conference presentation and the following discussions of my work with more experienced crystallographers. These discussions have yielded some new directions for my research and hopefully some new collaborations.

The delights of Broome supplemented the superb scientific program and afforded the opportunity to indulge some of my other interests including swimming, fishing and sightseeing. Naturally, I am looking forward to Crystal 24 in 2005.

Karena Chapman
University of Sydney

Crystallography at Cable Beach

I would firstly like to thank SCANZ for providing me with a 1987 Maslen Scholarship to attend both the AsCA conference and the Biological Workshop. The conference was well represented with Scientists from all over the world, and with my focus being quite biological; both programs offered a good variety of crystallography. Being invited to help with the running of some of the sessions was a great opportunity for students to meet with the speakers.

It was interesting to hear more about some of the Structural Genomics and Highthroughput Crystallographic projects such as Yokayama's work at RIKEN. So many structures are being solved by these groups each year and contributing to the pool of unknown protein folds. It was interesting to note the contrast between Structural Genomics initiatives with work on the structure of enzymes and their function, which considered catalytic mechanisms in intricate detail and work on Biological targets with a view to drug design.

The highlights for me were a particularly animated presentation by Alwyn Jones discussing protein structure validation, in between deriving new units of measurement (the "GUSS") and taking PowerPoint to places it had never been before. Also, the CCP4 workshop, which looked predominantly at Molecular Replacement, provided a mixture of new methods such as Maximum Likelihood as well as a review of existing methods, and was a very worthwhile session for a novice or an experienced user.

Broome was a beautiful location for the conference, and as the week went on, the tanned faces suggested that I was not the only person enjoying Cable Beach. The program allowed for a look around Broome itself including the Crocodile park, the moon rise (which was quite an unusual spectacle) and Gantheaume Point where a small group of us actually managed to find those elusive dinosaur prints.

Thanks again to SCANZ and also to the organising committee for an excellent conference.

Jacqueline Satchell
WEHI

I would like to thank SCANZ and the conference organisers for the opportunity that they presented to me with the Maslen Scholarship to attend "Broome 2003". The AsCA/SCANZ meeting was the first chance that I've had to speak to a scientific audience outside my own department, and aside from the valuable experience that I had in writing and delivering the presentation, I received a large amount of valuable feedback on my work.

My personal highlights from the meeting were Colin Raston's talk on his control of fullerene assembly using calixarenes, and Victor Young's twinning workshop, which will probably be very useful later on in my PhD. I would like to congratulate the committee on the fantastic job that they did in organising the meeting. I especially enjoyed the poster sessions that were a great opportunity to meet people from all over the world while enjoying a quiet afternoon drink.

The conference gave me a chance to talk to people who use crystallography to investigate materials that are very different from the coordination polymers that I work with. My research group almost exclusively uses single-crystal X-ray diffraction to determine the structures of our materials, which rarely have more than 15 atoms per asymmetric unit. I had a chance to discuss my results and crystal growing techniques with people who use synchrotron radiation with proteins or electron microscopy to investigate solids. This has given me insights into other ways and different types of data that I could extract from my compounds.

I would also like to congratulate the organisers on their choice of venue. It was fantastic to escape from a chilly winter in Melbourne to tropical Broome. Aside from the conference, I managed to head out on an off-shore fishing trip.

Thanks again to SCANZ for the funding that made my trip possible.

Michael Moylan
University of Melbourne.

AsCA'03/Crystal-23

Broome, WA, was an idealic setting for the AsCA'03/Crystal-23 meeting this year. White sand, blue water, an abundance of excellent tourist attractions, and an average temperature of 28 C coupled with exciting science and friendly people made for a conference I will not forget.

Being mid-way through my PhD, I have read many papers specific to my field of interest and being at this conference gave me the opportunity to put a face to a lot

of the names that I have seen mentioned. One particular plenary lecture that stood out to me was by Prof. M. Tanaka on the techniques of electron diffraction.

The poster sessions gave everyone an excellent opportunity to have one on one discussions, and ask in depth questions about other peoples work. I also found that when it was my turn to present a poster it allowed me to bounce new ideas off of people who are experts in the field.

On the last night the conference convenors hosted an amazing dinner on the foreshore of Cable beach. At this dinner I was awarded the PANalytical award for my poster, which I am very grateful for.

I would like to thank SCANZ for the financial support that they provided so that I could attend AsCA'03/Crystal-23.

Christian Maunders
Monash University

Call for applications for the 'E.N. (Ted) Maslen 1987 Studentships and Scholarships

The Council of the Society of Crystallographers in Australia and New Zealand is calling for applications from postgraduate students of crystallography for the 'E.N. (Ted) Maslen 1987 Studentships and Scholarships' to fund attendance at the The Sixth Conference of the Asian Crystallographic Association 2004 - AsCA'04 - which will be held 27-30 June 2004 at the Hong Kong University of Science and Technology (HKUST), Hong Kong, China .

Details of the meeting are available on the Web at the address:http://www.ust.hk/asca04/>http://www.ust.hk/asca04/.

SCANZ student members from both Australia and New Zealand are invited to apply for the Scholarships, which will make a substantial contribution to the international travelling costs. Selections will be based upon merit, geographic distribution and previous and/or future opportunities of the candidates. As the SCANZ Council regards these awards as an important means of introducing young crystallographers to the international scientific community, students awarded Scholarships will be expected to make a presentation of their work at the meeting.

The method of application is straightforward, but a strict deadline will apply.

Method of Application

- Postgraduate students applying for a 'Maslen 1987 Scholarship' should forward to the Secretary the following:

An abstract of the presentation sent, or to be sent, to the Congress Secretariat.

- A covering letter from the applicant's supervisor providing a brief reference and verifying that the applicant is a bona fide student at the time of the meeting.
- An indication of what other funding may be available from the applicant's own institution.
- An indication as to whether the applicant has previously received funding from the SCA or SCANZ.

Applications must reach the Secretary of SCANZ by **MARCH 8 2004**. It is strongly recommended thatApplications be sent by email, though if this is problematic they can be sent by mail or - the least preferred method - fax.

E-mail:
G.B.Jameson@massey.ac.nz
Subject: SCANZ/AsCA Hong Kong meeting
Attached: A single WORD file containing the above items.

Mail:

Geoffrey B Jameson
Secretary SCANZ
Institute of Fundamental Sciences
Massey University
Private Bag 11 222
Palmerston North
New Zealand

Fax:

Geoffrey B Jameson
Secretary SCANZ
FAX: +64 (0)6 350 5682 (if outside NZ, the 0 in parentheses is omitted**)**

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B.W. Skelton (UWA, WA)

CRYSTAL FRAGMENTS

Well for myself and everyone else on the east coast, we traveled almost as far as we possibly could while still remaining in Australia. At the very least, this rather exotic location was going to be a perfect location to the escape sub zero nights of Armidale, but in every respect it was so much more and definitely worth every kilometre traveled many times over. The science, the people, the weather and the food: All fantastic! The only downside to all of this is the response you get every time from people asking where the conference was held; "Gee, you scientists do it hard", but I think I can cope with that.

There was certainly a lot a science to digest from many varied areas of crystallography, and it is always interesting to see what others are doing. From the Plenary sessions on bacterial flagellum and ultra fast neutron diffraction experiments at the SCANZ meeting to the oral presentations and the posters at both the SCANZ and Sagamore meetings, of which there are too many to mention and needless to say all of high quality. I also must congratulate all the other students on their excellent presentations and especially to those who received prizes.

Unfortunately I didn't get to see many of the attractions of Broome during the SCANZ meeting, between workshops, meetings and poster sessions. The Sagamore meeting afforded a greater chance to explore the surroundings during the afternoons, and I guess my only regret in the whole experience was not staying in Broome longer to see what I missed. On saying that however I did see the Staircase to the moon, the bird sanctuary and we visited the point to see the dinosaur tracks but the tides were a bit high.

Looking back on the experience I feel extremely grateful for the opportunity to attend a great conference in a location like Broome. It is for this reason that I am indebted to SCANZ for providing me with a Maslen scholarship and the opportunity to give an oral presentation. Of course the other credits must go to the sponsors and the organising committee for a job well done.

Andrew Whitten

University of New England. **Exotic Science Spectacular**

Broome being the chosen venue for AsCA'03 gave us Perth based crystallographers an opportunity to attend a conference on home soil, or near enough. Broome is over 2000km from Perth and the poorer students from UWA were planning to borrow the geology bus and make the trek. Fortunately, the so called “love bus” expedition wasn't necessary as we were able to fly there due to the generosity of SCANZ through the award of Ted Maslen '87 scholarships. Certainly, Broome was an excellent choice, a warm escape from winter, the small, slow-paced holiday town lent a relaxed atmosphere to the conference. This was recognised by the organisers who structured the sessions around a large gap of free time in the afternoon that made for a lot of relaxing on the beach and broke up the slog of continuous sessions characteristic of other conferences I've attended. The science was varied and interesting with Alwyn Jones' presentation particularly entertaining. Other highlights included the structure of the T7 RNA polymerase elongation complex and the session on membrane proteins. Also, it is always interesting to see the progress made by the local structural genomics groups and the Riken group.

Julian Vivian

New “Broome” Sweeps Clean

Broome with a View

The very first day we arrived in Broome for the International Crystallographic Meetings we knew that this conference was going to be something special. The change from the dreary weather in Perth to the sun and surf of Cable Beach was enough to make me instantly excited. Initially the atmosphere was almost surreal being surrounded by the familiarity of crystallography, in an environment I associate with long, lazy days at the beach,

far removed from all things academic. Needless to say we all stuck out quite a bit amidst the bronzed locals.

The Welcoming Reception at Cable Beach Club let us know we were in for a treat with the conference catering; tropical fruits, seafood, exotic dishes and more wine than you could possibly drink; and everyone was in good spirits with the prospect of a fabulous week ahead. On the walk home from the reception to our accommodation we were fortunate enough to stumble upon a male and female swimsuit competition, in full swing, at the local pub down the road. This was a great introduction to the friendly and fun loving attitude of the Broome people and certainly an unexpected bonus for some of us!!

And of course there was the excellent scientific program. One of the sessions I enjoyed most, was "Nucleic acids and their protein complexes" on the first day of the AsCA conference. The majority of presentations in this session were given by PhD students, and the quality of these talks was excellent - it was very inspiring.
The lectures given by Shigeyuki Yokoyama's group were a real eye opener to the different approaches taken towards structural genomics/proteomics in other laboratories around the world.

With lectures running concurrently in two seminar rooms there was not a time when there was a lecture or workshop that was not interesting or worthwhile attending. The only complaint I have (but of course would not change) is that there was so much to do and so little time to do it in. With the excellent scientific program, making the decision to go to the beach or see the Broome township was quite a dilemma. Being able to see the beach just meters away every time we stepped out side of the Sam Male Lecture room was torturous! And the beach was glorious, I haven't enjoyed a swim in the ocean so much for a long time, well, since I started my PhD to be precise.

Finally I would like to thank SCANZ for their support in sending me, and my fellow PhD students, to Broome. Even though Broome is located in Western Australia, because of it's remote location we would not have been able to attend with out this assistance. I would also like to thank Syd Hall for giving me the opportunity to become involved with the conference at an organisational level, the experience was invaluable and allowed me to get as much as possible out of the meetings. It was great to be able to meet delegates I have chatted with on the emails but had not yet met. The opportunity to meet so many people involved with crystallography in Australia for me was one of the best aspects of the meetings, senior delegates who's names I am familiar with from my supervisor, Matthew Wilce, and through publications, and other PhD students who I look forward to getting to know better at future conferences and in our careers.

Joyanne Kelly

Department of Pharmacology, University of Western Australia

NATIONAL COMMITTEE

FUTURE CONFERENCES

IUCr XX

The twentieth Congress and General Assembly of theInternational Union of Crystallography will be held in Florence, Italy from 23-31, August 2005 at the Congress Centre. The committee chairpersons are Carlo Mealli (Scientific Program) and Paolo Dapporto (Local Organising Committee). The Congress Centre is located in the very heart of the city, within walking distance of the main tourist attractions and most of the hotels. Further information, including an Interest Form, can be found at the Congress website: http://www.iucr2005.it.