

NEWSLETTER

Society of Crystallographers in Australia and New Zealand

FROM THE PRESIDENT



With the recent AsCA meeting behind us (well done to everyone involved in what turned out to be a challenging meeting, particularly our own Alice Vrielink, who put in an enormous amount of work as chair of the Program Committee), and the New Year begun, SCANZ now directs its attention to two upcoming events.

The first of these is the Australasian Crystallography School, to be held at the Australian Synchrotron from 31 Jan to 5 Feb. Again, an excellent program has been put together, to be taught by a great team which has, for the most part, taught at a number of such Schools to date. This is now the fourth such School and I think they have, collectively, given fantastic service to our next generation of crystallographers, greatly increasing both the depth and breadth of their crystallographic knowledge. This is particularly important in the modern environment where crystallography is rarely taught at undergraduate level and yet it is becoming more and more accessible



<http://scanz.iucr.org/>

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FROM THE PRESIDENT



and automated (which is a mixed blessing). I am regularly stopped by students from previous Schools who mention how enjoyable and useful their School was, which is always satisfying to hear. I expect this year's will be no different, and let me congratulate and thank in advance the organisers and teachers for all their hard work. The fact that we've gotten to the fourth such School and that there is now a general expectation of future Schools on a regular basis is a testament to the passion and commitment of those involved to put something back into the crystallographic community on an ongoing basis.

The second event is SCANZ's 'main event', the upcoming Crystal 30 conference (crystal30.com). Although this is nominally hosted by the Victorian crystallographers, it is to be held this year, by overwhelming popular demand, in Hobart. The conference will start on Easter Tuesday, and with Easter 'early' this year it means it's not far away (29 March – 1 April, 2016). Registrations and abstract submissions are now open, but with a number of us still undoubtedly in holiday mode, submissions so far have been disappointingly low. So please, when you get back from the beach tonight, jump on the website and register and submit your abstracts, not only because successful Crystal conferences are vital to SCANZ, but also because it promises to be a great conference with a fantastic setting on the Hobart waterfront. We have an excellent lineup of speakers being put together by the program committee, so keep an eye on the website. Confirmed speakers so far include Branton Campbell (Brigham Young U, USA) as our 1987 Plenary Speaker, and JJ Vittal (NUS, Singapore), Richard Cooper (Oxford, UK), Tamir Gonen (Howard Hughes Medical Institute, Janelia Farm) and Kristina Djinovic-Carugo (Max F. Perutz Laboratories, Vienna) as Keynote speakers. Some of the accommodation reservations will need to be released soon, so please get in early. Also, given that the conference starts at the end of the Easter break, consider combining the conference with a family holiday in the beautiful Tasmanian countryside – I know I am!

The final thing I'd like to highlight is the fantastic news that the Australian Synchrotron has secured funding of \$520M over ten years from the Australian Government. This is an enormously important investment in a vital facility, and in Australian science in general, and the government is to be congratulated in making such a large long-term investment in science. This is particularly noteworthy as it breaks an ongoing cycle of short-term funding arrangements and general uncertainty around the facility which has continued for far too long and has, frankly, been both embarrassing and frustrating. This announcement allows the facility and its staff to proceed forward with certainty, including the development of new beamlines, which will keep the facility at the forefront of world research. Congratulations (and thanks) are due to Adi Paterson, Andrew Peele, and all their team for this excellent outcome.

See you in Hobart!

Stuart Batten

SCANZ President

AsCA 2015 MEETING REPORT



The 2015 AsCA conference was held from December 5 – 8th in Science City, Kolkata, India. The conference was attended by approximately 400 delegates from over 26 different countries. An exciting program composed of 117 talks, including 4 Plenary and 5 Keynote sessions were presented during the 4 day meeting. Additionally 177 poster contributions, 78 of which competed for a variety of poster prizes.

The 4 Plenary sessions covered a comprehensive history of lectin structural science in India (Professor Mamannamana Vijayan), a fascinating journey through the design and applications of metal-organic frameworks (Professor Mohamed Eddaoudi), experimental methods for exploring crystallization pathways and structure properties of solids (Professor Kenneth Harris) and new and exciting advances in the field of serial femtosecond crystallography (Professor Petra Fromme). In addition to the 18 microsymposia covering 3 main subject areas of the conference: Macromolecular crystallography, Chemical Crystallography and Specialized Methods/Techniques, a special interest session on Pharmaceuticals included talks on a wide range of subjects from pharmaceutical gels to structure guided drug design.

The meeting culminated with a highly competitive Rising Star competition of which the 6 finalists were given the opportunity to present their exciting research results. Congratulations go to:

Sajesh Thomas (University of Western Australia, Australia) - *Insights into mechanical properties of molecular crystals from energy frameworks and quantum crystallography*

Rajesh Ghai (University of New South Wales, Australia) - *Molecular mechanism of ER-plasma membrane junction maintenance by integral ER membrane proteins, ORP5/ORP8*

Vidya Mangala Prasad (Purdue University, USA)- *Structural studies on the rubella virus capsid protein and its implications on the virion structure*

Michelle Christie (University of Queensland, Australia) - *Opening up to vesicle fusion: The effect of Munc18c and membrane anchoring on Syntaxin-4 function*

Rahul Shukla (Indian Institute of Science Education and Research, India) - *Crystallographic and computational investigation of intermolecular interactions involving organic fluorine with relevance to the hybridization of the carbon atom*

Suman Bhattacharya (Indian Association for the Cultivation of Science, India)
- *Thermal expansion and hydrogen bonds: a case study on polymorphic systems with different hydrogen bond dimensionalities*



AsCA 2015 MEETING REPORT (CONTINUED)

Additionally the following poster prizes were awarded:

IUCr Poster Prize

Manish Kumar Mishra (Indian Institute of Science, India) - *Designing mechanical properties of molecular crystals*

Pujari Chandrasekhar (Indian Institute of Technology Kanpur, India) - *Functional metal-organic frameworks (MOFs) based on rationally designed organic linkers*

Hisato Hirano (The University of Tokyo, Japan) - *Structure-guided engineering of CRISPR-Cas9 PAM specificity*

AsCA2015 Prize

Pradeep Shanbogh (Poornaprajna Institute of Scientific Research, India) - *Local and average structure of BiREWO₆ (RE = Eu and Tb) nano photocatalyst*

Mintu Chandra (Indian Institute of Science Education and Research, Bhopal, India) - *Insights into molecular switch: crystal structure analysis of wild-type and fast hydrolyzing mutant of EhRabX3, a tandem ras superfamily GTPase from Entamoeba histolytica*

Md. Amran Hossain (Kyoto Institute of Technology, Japan) - *Melt-isothermal crystallization behavior and melt viscosity of poly(3-hydroxybutyrate-co-3hydroxyhexanoate) thin films*

PDB Prize

Vitul Jain (International Centre for Genetic Engineering and Biotechnology, India) - *Structure of prolyl-tRNA synthetase-halofuginone complex provides basis for development of novel drugs against malaria and toxoplasmosis*

On the social side of the conference the opening ceremonies included a beautifully choreographed presentation of cultural Bengali dances performed by the dance troupe of Tanusree Shankar. The conference dinner, held at Swabhumii in Kolkata also included more Bengali traditional dances and music as well as a large buffet meal and lots of beer and wine to enhance the social interactions.

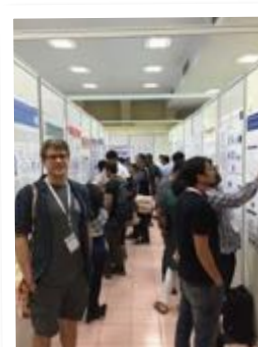
Alice Vrielink



ASCA 2015, MASLEN SCHOLARSHIP REPORTS



The aptly named Science City in Kolkata was the venue for the 2015 Asian Crystallographic Association Meeting (AsCA 2015). It hosted an excellent scientific program and I take my hat off to the organising committee who seemingly had to overcome some serious bureaucratic hurdles to run this meeting.



Petra Fromme impressed (as always) with a plenary on serial femtosecond crystallography using the X-ray free-electron laser and shared her ambitious plans to develop a far cheaper X-ray free-electron laser for serial attosecond crystallography. After seeing Petra talk both at Crystal29 and AsCA 2015, I have little doubt that attosecond crystallography will become a reality and revolutionise our field in the not-too-distant future.

It was great to see Australian and New Zealand crystallographers present some exciting new stories. I particularly enjoyed Alice Vrielink's talk on an endotoxin-modifying enzyme from the *Neisseria* pathogen and Michael Landsberg's structure of a spectacular ABC toxin.

The cultural program did not disappoint either with two impressive dance performances. We had some delicious meals during our time in Kolkata (although a few stomachs had trouble adjusting) and it was great having Santosh share some of his favourite Indian specialities with us at the conference dinner.

AsCA 2015 was a fantastic opportunity to catch up with SCANZ members and meet other top scientists from the Asian region. I would like to sincerely thank SCANZ for awarding me an International Maslen Scholarship that made my trip possible.

Angus Cowan

Walter and Eliza Hall Institute of Medical Research



ASCA 2015, MASLEN SCHOLARSHIP REPORTS



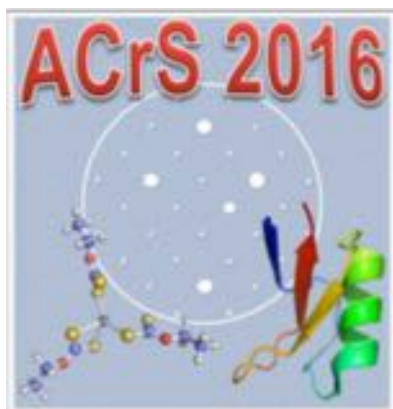
The historical and cultural city of Kolkata, India provided an exciting backdrop for the ASCA '15 conference, and in particular the appropriately named venue Science City. The conference was well represented by close to 400 delegates from Asia-Oceania, Europe and North America. Each micro-symposium was comprised of talks that covered a broad range of crystallographic topics, emphasizing the very diverse research undertaken worldwide. The plenary talks from Petra Fromme and Mamannamana Vijayan were perhaps the highlights of the conference for me. Both talks were exciting and inspirational, from Petra's presentation about time resolved serial femtosecond nanocrystallography with Photosystem II to Mamannamana's career of lectin structures from plants and mycobacteria. I was impressed with the number of presentations combining crystallography and electron microscopy, including Michelle Dunstone's fascinating progress to gaining structural information of the MACPF/CDC pore forming protein superfamily. I would like to thank SCANZ for awarding me the Maslen Scholarship to attend this conference, and the organisers for allowing me to present a poster on my PhD research. This conference has exposed me to cutting edge crystallographic research and was a truly valuable learning experience!

*Amy McGrath
University of Wollongong*



Australasian Crystallography School 2016

31st January to 5th February 2016



The Australian Synchrotron and SCANZ are pleased to announce the **Australasian Crystallography School 2016**.

This school is intended for PhD students and early postdoctoral researchers wishing to develop their theoretical and practical skills in structure determination by X-ray crystallography.

The course will combine lectures by expert crystallographers with intensive hands-on computer-based practical sessions to provide a thorough introduction to the theory and practice of X-ray crystal structure determination.

In this school one can either learn chemical or protein crystallography.

It is open to people from institutions within Australia and New Zealand; although selected participants from overseas may also be considered (numbers will be limited).

SCANZ student members may apply online for consideration for Maslen scholarships as well as the crystal school.

Workshop Venue



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Subjects covered

Crystallography theory, Data collection, Data reduction, Phasing,

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UPCOMING MEETINGS



We invite you to join us at CRYSTAL 30, the 30th Conference of the Society of Crystallographers in Australia and New Zealand. The conference will be held in the Hobart Function and Conference Centre, Tasmania from 29 March - 1 April 2016.

The venue enjoys a waterfront location like no other, situated as it is on Elizabeth Street Pier, spanning 100m out over the sparkling water of the Derwent, the centrepiece of Hobart's bustling waterfront community. The event spaces boast floor to ceiling windows so delegates and guests enjoy Hobart's wonderfully clear natural light.

The submission of abstracts is open. Please [click here to submit](#) your abstract. **To be considered for an oral presentation, abstracts must be received by no later than 5pm Friday 12 Feb 2016.**

[Rising Star Applications:](#)

Completed forms and a copy of the abstract should be sent on or before January 17, 2016

Bragg & Mathieson Medals. [Please read details here.](#)

Please take a moment to look at the [website](#) to see details of the 1987 Plenary Speaker and the Keynote Speakers

To express interest in receiving updates and attending the conference please complete the Expression of Interest on the website <http://crystal30.com/>

