

NEWSLETTER

Society of Crystallographers in Australia and New Zealand

SCANZ PRESIDENT'S REPORT



Well..... my last report for this Newsletter concluded with all sorts of plans for an in person meeting for Crystal 33, however as has been a typical experience of the last 18 months, our collective hopes were dashed and the meeting became a virtual conference. However, I hope you will all agree that the conference was an overwhelming success and showcased an inspiring cross section of the research that occurs within our Society. Congratulations and thanks to Chris Ling for his role as Conference Chair and to the members of the Organising and Program Committees – Aaron Oakley, Jade Forward, Alison Edwards, Suzanne Neville, Katrina Zenere, Michael Gardiner, Tom Caradoc-Davies, Alastair Stewart and Yun Liu – on delivering an outstanding meeting under extraordinarily difficult circumstances. I hope they are all enjoying a good rest now.

The organisation for the accompanying Business meeting was equally eventful, with a last-minute switch from Melbourne to Sydney due to the imminent arrival of Melbourne's fourth lockdown (I write to you now from lockdown number 6!). Thank-you to Chris Ling, Jack Clegg, Helen Maynard-Casely and Suzanne Neville for rallying to make sure the meeting could go ahead and to all members who either attended in person or *via Zoom*. The organisation of this Business Meeting highlighted the potential benefits of moving such meetings online in the future. This was reiterated at the meeting by Alison Edwards, who moved that the Council make arrangements for future Business Meetings to proceed virtually. The Council has already convened and plans are underway.

A number of people completed their formal contributions to SCANZ at this meeting. Thank-you very much to Jade Forward and Tara Christie for their service to the Education Committee, Jo Etheridge for her contributions to the Nominations Committee, Suzanne Neville for her membership of the Council and



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New SCANZ Committee

Brendan Abrahams for his service as Treasurer. Finally, sincere thanks to Chris Ling for his time as Secretary, President and Past President.

The full list of the Council elected at the Business Meeting is as follows:

President: Megan Maher (VIC)

Past President: David Aragão (UK - elected by council post-meeting)

Vice-President: Charlie Bond (WA)

Councillors: Chris Sumbly (SA)

Secretary: David Turner (VIC)

Helen Maynard-Casely (NSW)

Treasurer: Jack Clegg (QLD)

Lauren Macreadie (NSW)

The current members of the Nominations Committee are:

Brendan Kennedy (NSW)

Mitchell Guss (NSW)

Alice Vrielink (WA)

The current members of the Education Committee are:

Jason Price (VIC)

Begoña Heras (VIC)

Stephanie Gras (VIC)

Thank-you to all for taking on these roles and contributing to our Society so generously.

I am really looking forward to the activities that are being developed for our Society. Planning has already started for the next Crystallography School, which given the current COVID-19 situation, will most likely be held virtually in early 2021. The Council is also very hopeful that we can introduce a new initiative of an ECR meeting - either face-to-face or hybrid in April/May 2022. We are also beginning the early stages of planning for the Crystal 34 conference to be held in December 2022, with more detail to come.

The Council has already implemented one of the initiatives from the last Newsletter, in the form of financial support for ECRs to support conference attendance. Four ECRs, in addition to one student (through a Maslen scholarship) were supported to (virtually) attend August's IUCr Congress in Prague. The Council is also working on initiatives mentioned in the last Newsletter, including a greater engagement with our members in New Zealand and a program to support those with carer responsibilities to attend meetings. I look forward to updating you as these initiatives progress.

One important change is that the Council has moved to award the Mathieson Medal annually. We have revised the criteria slightly (open for applicants with 15 years or less postdoctoral experience) and designed a new application form that aims to encourage applications from diverse members of our community, including those with career disruptions. A call for applications will be sent in the next weeks, so please keep an eye out for this.

As you will see, this issue includes an update from Michael Parker on the planning of the IUCr 2023 meeting for Melbourne. This activity is due to ramp up in earnest following the conclusion of the meeting in Prague. The next two years are certainly going to be busy and rewarding.

In exciting recent news, a member of our Society, Professor Yin Liu (ANU) has been awarded an ARC Laureate Fellowship and the Georgina Sweet award, which supports the promotion of women in research. Warmest congratulations to Yun on behalf of all of us. You can read more about Yun and her award later in this Newsletter.

Sending my best wishes to all colleagues who still find themselves battling the restrictions associated with this pandemic. I hope you are all safe and well and it is not too long until we can see each other face to face.

Megan Maher

SCANZ President

CRYSTAL 33 REPORT

More than a year after it was first scheduled, and 2.5 years since Crystal 32 in Auckland (combined with AsCA 2018), I had the pleasure of finally opening Crystal 33 on the morning of May 25, 2021. I'd like to express my sincere thanks to the Organising and Program Committees for all their hard work on continuously shifting ground; the sponsors for their support in uncertain times; the delegates for their willingness to adapt to the constraints of the format and delivering such outstanding presentations, both as talks and posters; and all the members of SCANZ for your patience.

As you all know, the meeting was held in a mostly virtual format rather than in Wollongong as originally planned. We made a few changes to the shape of the program based on experience with other virtual meetings over the last year, notably shortening it to a total of 16 hours of scheduled sessions over three half-days (vs. the traditional three full days). Despite this, the reduced overhead between talks and sessions meant that we still heard from 67 speakers, which is typical for a Crystal meeting. Of course, at normal in-person meetings, that overhead is networking time, which is a huge part of the appeal of Crystal meetings – but I'm sure we'll make up for it next time.

On the upside, we had 196 registered delegates for Crystal 33, which to the best of my knowledge is the most ever for a regular Crystal meeting (not combined with AsCA). We also had 40% female speakers, which – while still not high enough, obviously – is the highest ever. Hopefully both of these trends will continue at Crystal 34, which I am very much looking forward to attending in person.

Chris Ling

Organising Committee

Chris Ling (Chair) (University of Sydney)
Suzanne Neville (University of New South Wales)
Jade Forwood (Charles Sturt University)
Alison Edwards (ANSTO)
Aaron Oakley (University of Wollongong)

Program Committee

Megan Maher (Chair) (University of Melbourne)
Michael Gardiner (Australian National University)
Tom Caradoc Davies (ANSTO)
Katrina Zenere (University of Sydney)
Alastair Stewart (Victor Chang Cardiac Research Institute)
Yun Liu (Australian National University)

Professional Conference Organiser (PCO): Madeline Ezelle (The Association Specialists)

Sponsors

Dectris	Stoe
CrystallMaker Software	ThermoFisher Scientific
CrystEngComm	Bruker
AXT	

1987 Plenary Speaker: Lukáš Palatinus (Czech Academy of Sciences)

Bragg Medallist: Chris Chandler (University of Melbourne)

SCANZ Rising Star Awards (\$200 each)

Shane Horsefield (University of Queensland)
Tess Malcolm (Monash University)
Shadi Maghool (University of Melbourne)
James Walshe (Victor Chang Cardiac Research Institute)
Jeff Nanson (University of Queensland)

CrystEngComm Poster Prizes (\$100 each)

Sam Walker (Monash University) Sofia Tsimbalyuk (Charles Sturt University)

REPORTS FROM IUCR 2021 PRAGUE



By Jiuguang Wang - <https://www.flickr.com/photos/jiuguangw/11920245696>, CC BY-SA 2.0, <https://commons.wikimedia.org/w/index.php?curid=35045791>

Tess Malcolm, Bio21 Institute

This year the 25th IUCr Congress was held as a hybrid event based in Prague, Czech Republic, with presentations coming both live from Prague and online from around the world.

Although attending conferences in person is an exciting opportunity to travel to new places and meet new people, the online aspect presents an advantage in allowing contributors from all over the world to easily attend and giving accessibility to those who may not be able to travel. As the congress was held in Prague this year, sessions were held late at night and very early morning Melbourne Time – luckily the science was so intriguing it wasn't hard to stay awake! There were a range of excellent sessions focussing on X-ray

crystallography, cryo EM, drug design and material sciences, and a number of sessions dedicated to the structural biology studies surrounding COVID-19. These sessions were a highlight for me and felt particularly relevant as Melbourne attendees were attending this congress during Lockdown #6. It was inspiring to see the global networks that were formed and the openness with which scientists were sharing their COVID research, in their collaborative efforts to achieve a common goal.

Thank you to SCANZ for awarding me an ECR Maslen Scholarship and making attendance at the 25th IUCr Congress possible. I am very much looking forward to the 26th IUCr Congress in Melbourne 2023!

Patrick Tung, University of New South Wales

Initially in 2020, I was working in Prague as a post-doctorate and could see the IUCr venue from my apartment balcony. Understandably, I was excited to be able to attend the conference with such a close proximity and have the opportunity to show people around the city. However, due to the COVID outbreak, that was not possible. Nonetheless, IUCr was still able to put together a comprehensive conference covering the latest science in the crystallography field. Of particular interest to me was the growing areas of disordered structures and machine learning, in addition to the exceptionally useful software session that gave an introduction to various programs for analysis. During my own session, the talks were relevant and interesting, with a surprisingly easy and well laid-out process for presenting. The organisers of



By A.Savin (Wikimedia Commons - WikiPhotoSpace) - Own work, FAL, <https://commons.wikimedia.org/w/index.php?curid=53724149>

the conference must be commended in adapting and delivering on a seamless experience, both as an attendee and a presenter. I would like to thank SCANZ for supporting my participation at IUCr 2021 and for allowing me to share my work at such a prestigious international conference.

Weilun Li, Monash University

I am a research fellow at Monash University, studying perovskites using transmission electron microscopy. This was my first time attending the IUCr conference and I was really amazed by the coverage of topics across the conference, ranging from X-ray/neutron-based methods to electron probe methods, either cryogenic or traditional and many and many other advanced techniques in solving crystal structures. I was particularly impressed by the atomic resolution achieved by cryo-electron microscopy, where even a single hydrogen atom can be clearly resolved (thanks to the development of an aberration corrector and monochromator!)

There were some electron diffraction techniques that I heard about in the past but haven't got a chance to explore further on my own, such as micro electron diffraction, precession electron diffraction and quantitative interpretation of electron diffraction data. Many great talks were given at this IUCr conference on these interesting topics. Beyond the electron diffraction/imaging, I found a wide range of techniques at the conference, using coherent X-ray probes in understanding the crystallography of perovskite structures. In the past, I focused mostly on electron microscopy, and we always need to be very careful about the high energy electron probe used. At this conference, I see the potential of combining with scanning X-ray techniques to determine subtle structures in perovskites, e.g. domain structures, ordering, octahedral tilt/distortion. Overall, I feel very lucky to have had this opportunity to attend such a fantastic conference. Importantly, without the support from SCANZ and the efforts by conference organisers, this journey would not be possible for me.

Nilakhi Poddar, Bio21, University of Melbourne

I recently attended the 25th Congress of the International Union of Crystallography (IUCr), 2021 that was held in Prague. Unfortunately, due to travel restrictions, I was not able to attend the conference in person, but thoroughly enjoyed the virtual hybrid conference from the comfort of home. The conference program began on Saturday the 14th of August, and in the first part of the day I enjoyed the Ewald lecture given by Suzanna Ward on behalf of Olga Kennard, who won the Ewald prize for her outstanding contribution in developing the Cambridge Crystallographic Data Centre. The conference housed high quality of presentations ranging from topics in structural biology, cryo-electron microscopy, synchrotron, and chemical crystallography. For me, one of the highlights of the meeting was Gonen Tamir's plenary talk about the work his lab has pioneered on MicroED, and he emphasised the potential of this technique in the field of structural biology in solving various limitations faced by conventional X-ray crystallography methods. I also enjoyed the IUCr - Bragg Prize winners – James Fraser and Jean-Philippe Julien on their exceptional work on COVID-19 and malaria vaccine. I learned about various hybrid techniques of crystallization such as in-gel crystallisation, where I learnt concepts about how to grow crystal in agarose gel.



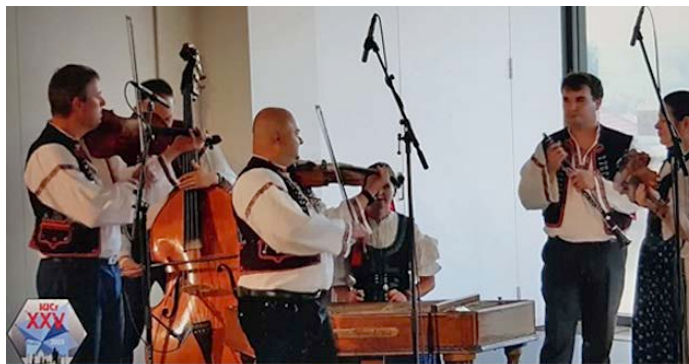
On the Thursday of the conference, I was fortunate enough to be selected to give a talk on my PhD project in the "Integrative structural biology: The Next 50 years of the Protein Data Bank" session and this was a wonderful opportunity for me to share and discuss my work with others. I had exciting and insightful questions and suggestions about my work, which has opened new arenas of my project.

The organising committee put together a fantastic program and I thoroughly enjoyed the scientific content as well the meeting. Finally, I would like to thank the SCANZ committee for awarding me a Maslen Scholarship to attend IUCr 2021 virtually. This award has significantly enhanced my PhD experience by allowing me to attend the conference. I feel honoured and privileged to be part

of the SCANZ community. I would also like to thank my supervisor A/Prof Megan Maher for her constant and ongoing support.

Shadi Maghool, Bio21, University of Melbourne

Virtually, I attended the 25th hybrid congress of the International Union of Crystallography (IUCr), that was held in Prague from 14th to 22th August 2021. The official meeting started with the history of crystallography followed by the outstanding Ewald Prize lecture, where the contributions of Olga Kennard towards crystallography was discussed and this had inspired me immensely. I come from a structural biology laboratory specialising in X-ray crystallography and characterisation of metalloproteins, so one of the most interesting session that I enjoyed thoroughly was the keynote session on “The symbiosis of cryo-EM and X-ray crystallography in structure determination of large macromolecular systems, where Holger Stark beautifully explained the potentials of cryo-EM and the limitations in sample preparation and evaluation of model building.



I was also thrilled to attend the session “Time resolved macromolecular crystallography” by Arwen R Pearson, as she described the importance of this methodology to look at time-dependent structural changes in proteins to access biochemical events at different time scales that relates to the function and regulation of the proteins. So, the team has developed a pump-probe time resolved macromolecular crystallography, T-REXX (Time resolved-experiments with crystallography) which is now user accessible.

I was able to present my work as a poster and this was a great opportunity to interact with other researchers and discuss new innovative ideas about my project. I would like to thank the SCANZ committee for introducing SCANZ ECR scholarships this year to support ECRs and I am honoured to be one of the recipients of this award. It was an amazing experience to attend this conference and I am looking forward for the next IUCr conference which will be held in Melbourne in 2023.



IUCR 2023 UPDATE

As the IUCr ‘2020’ meeting approaches rapidly, your IUCr 2023 Local Organising Committee is ramping up its marketing plans for presentation at the Prague Congress. Regulations due to the pandemic makes planning a challenge! Normally we would have expected to have a large Australian presence in Prague but this is not to be. Our revised plans include a virtual trade booth, a welcome to IUCr 2023 in Melbourne video and Melbourne coffee cups in registrant’s satchels! If anyone is presenting at IUCr ‘2020’ and would like to advertise our Melbourne meeting, we will make some slides available soon.



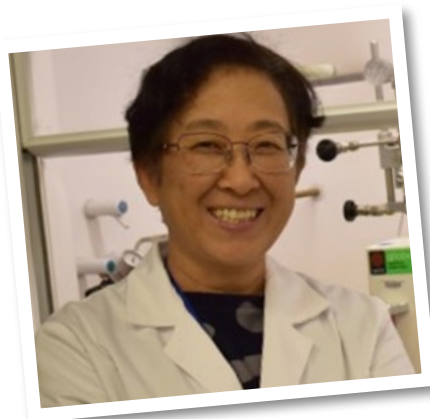
We are also making plans for the establishment of the IUCr 2023 International Program Committee. The IPC will consist of representatives from each of the 21 IUCr Commissions, ranging from Aperiodic Crystals to XAFS. As well as being responsible for the program, the IPC can organise satellite meetings associated with the Congress.



The IUCr 2023 local organising committee consists of Michael Parker (Chair, University of Melbourne and St. Vincent's Institute), Brendan Abrahams (University of Melbourne), David Aragao (Diamond Synchrotron), Stuart Batten (Monash University), Melissa Call (WEHI), Daniel Eriksson (ANSTO), Brendan Kennedy (University of Sydney), Helen Maynard-Casely (ANSTO), Megan Maher (University of Melbourne) and Tom Peat (CSIRO). As we get closer to 2023, we have plans to expand the committee to achieve better geographical representation across Australia and New Zealand. We are ably supported by our professional conference organiser, ICMS Australasia who are providing valuable support and advice to us.

We are very happy to receive suggestions on how to make our meeting the best it can be and for volunteers to help us out with our planning. Please contact the IUCr 2023 LOC through its Chair, Michael Parker (mparker@svi.edu.au).

SPOTLIGHT ON PROFESSOR YUN LIU



The SCANZ community extends its heartfelt congratulations to Professor Yun Liu (ANU) for being awarded the 2021 ARC Georgina Sweet Australian Laureate Fellowship!

Australian Laureate Fellowship

This is a prestigious research fellowship awarded by the Australian Research Council to researchers who play a significant, sustained leadership role in building Australia's competitive research capacity. It is awarded to up to 17 fellows each year.

Georgina Sweet Fellowship

The Georgina Sweet Fellowship is awarded to one outstanding female Australian Laureate each year. It was established in 2010 to recognise

combined excellence in research and in contributing to the advancement of women in STEM fields. Additional funding is awarded to the fellow to support them undertaking an ambassadorial role to promote women in research and to mentor early career researchers, particularly women.

Professor Liu completed her PhD at Xi'an Jiaotong University in China in 1997. She then moved to Japan as an Advanced Industrial Science and Technology (AIST) fellow in Kyushu (1998-2001). It was during this time that she discovered the importance of crystallography for materials

Georgina Sweet (1875-1946). *BSc* (1896), *MSc* (1898), *DSc* (1904) *University of Melbourne*. *OBE*.

Dr. Georgina Sweet was a trail-blazing zoologist and parasitologist. Her research won her national and international recognition. She was Australia's first *Doctor of Science*, a degree that is higher than a PhD. She was the first female senior academic at the University of Melbourne, first female acting Professor at a university in Australia and an outstanding mentor for young women and men in the sciences. She held numerous leadership positions and explained her role as a way to "show the world woman's ability to play her part in solving international problems" (*West Australian* (Perth, Jan 1937)).

science. She was keen to conduct more in-depth research in this area and wanted to expand her knowledge and skills. She discovered that there were three top crystallographers at the Research School of Chemistry at Australian National University (ANU), and it was this that prompted her move to ANU as a Postdoctoral Fellow in 2001. She is now a tenured academic and the Head of the Functional Materials Research Group at ANU. To help celebrate her award, I interviewed Professor Liu:

Professor Liu, Could you provide us a summary of your current research?

My research focuses on defect chemistry, local structure and functional properties of condensed matter. This enables me to have a deep understanding of materials and hence be in a right position to design new materials to have novel properties or optimise existing materials for optimal performance, with applications in electronic technology, energy and environment. For instance, new dielectric materials for next generation electronic technology, new polar functional materials for smart electronic devices and energy harvesting/conversion, catalysts for liquid organic hydrogen storage and solar-driven waste water treatment.



What role does crystallography play in your research?

I have been using X-ray crystallography as a powerful tool to reveal the chemical and structural complexity of solid-state materials and link these with their property and function for achieving better understanding of functional materials.

In the past, X-ray crystallography, developed by the Bragg father and son team (Australians, Nobel Prize in Physics in 1915), has transformed our understanding of material structure, guiding the discovery of functional materials. However, the property of many materials cannot be explained by this crystallographic structural information, averaged at no less than micrometre length scale (i.e. average structure). This is because the real structure of the materials is much more complex in comparison to its averaged structure if we look at more closely. Traditional X-ray crystallography misses the local chemical and structural complexity of materials at different length scales (e.g. nanoscale structural and chemical features). Even with conventional high-throughput experimental and simulation capabilities and emerging laboratory automation, many material discoveries and design problems remain intractable since the nanoscale structural information has not been factored in. Additionally, current materials research is notoriously slow, labor-intensive, and expensive due to the missing of clear, precise chemical and structural pictures of materials. As a result, material innovations often take decades from inception to commercialisation, often requiring large investment. This problem is an outstanding issue in the field of materials science.

I hope I can conduct some research and make some contribution to overcome the challenges facing traditional crystallography and improve material development.

What are your plans for the ambassadorial and mentoring portion of the fellowship?

I personally think Australia is the best place in the world to learn crystallography because we have not only a glorious history in X-ray crystallography, but also many excellent crystallographers who are passionate about crystallography. I have been inspired by the spirit of Australian “bush crystallographers” – a story I heard in one of the SCANZ conferences: in the old day, our predecessors of crystallography drove from both sides of eastern and western Australia and met in the middle to discuss crystallography. I think this spiritual wealth in scientific research should be continued. I had learnt a lot from my supervisor, Professors Ray Withers. I hope to build a platform to provide an opportunity for brilliant PhD students and postdocs (i.e. ECRs) who will be directly involved in the program to benefit from excellent crystallography research in Australia. I will provide mentoring to help new researchers develop the ability to adapt their skills, including crystallography, to work at the boundaries between disciplines where new and exciting science often emerge.

I also have another ambassadorial and mentoring role as a Georgina Sweet Australian Laureate Fellow to promote women in STEM. As I also have a diverse cultural background, I understand how difficult it is for women to bring a young family to Australia and develop their academic carrier. I will provide career development support to attract and retain talented female early career researchers (ECRs) in materials chemistry, including crystallography, facilitating disciplinary collaboration and promote women in STEM. I will visit rural or remote schools with a mind to create a girls-in-materials workshop to attract girls and young women to STEM. For detail, please see <https://www.arc.gov.au/policies-strategies/strategy/gender-equality-research/kathleen-fitzpatrick-and-georgina-sweet-australian-laureate-fellows/profiles-georgina-sweet-fellows#yunliu>

What's the biggest challenge you've faced in your career so far, and how did you overcome it?



In the current research culture and environment, it is difficult to conduct time-consuming, fundamentally important research like crystallography to make sustainable, long term, impactful achievement. People prefer to move into hot research areas so that they can relatively easily publish papers in top journals (because it is hot), for high citations (because many people work in that field), and subsequently achieving an "excellent academic performance" to facilitate career development and funding application. This is extremely challenging when you are in the ECR stage and before you secure your academic position. To overcome it, you need to broaden your research area and utilise your research strength to conduct some unique research in hot areas. By doing so, you may have a chance to survive and persist in your long-standing research field.

Do you have a piece of advice for female early career scientists interested in a career in research?

Balance life and work; gaining experience in life will benefit your work from different angles and aspects. Be optimistic by focusing your attention on long term, rather than short term goals and achievements. Respect your other half (husband/partner) and your children as they always stand behind you to give you support. Share housework with them, improve mutual understanding and maintain a good relationship.

What is the highlight of your career so far?

To receive the prestigious Georgina Sweet Laureate Fellowship is one to be highlighted as it is a recognition of my research.

TiO₂, as a photocatalyst has been broadly studied for more than 20 years to achieve visible light catalytic effect but the result has always been not optimistic. My first work on the photocatalyst achieves the best visible light catalytic performance, arising from my deep understanding of the chemical and structural complexity of materials that allows me to rationally design such materials.

What do you think is the biggest hurdle for women in science?

I came to Australia when my kid was nine years old. I found that the biggest hurdle for women in science is less support during their ECR and mid-career stage which are also the period of the child's birth and upbringing. For instance, it has been difficult for a full-time academic staff to manage their working time and couple well with the open hours of childcare, preschool, school holiday break etc.. In such a situation, women would be in a difficult position to have less capability (such as travel) to enhance their research and collaboration.

It will be nice if the government or research organisations can give more support to women in Science by improving their working and living environment with this regard.

VALE PROFESSOR CHARLES SPENCE

Our community was very saddened to hear of the passing of John Charles Howorth Spence, Richard Snell Professor and Arizona University Regents Professor, on June 28th in Boston. Professor Spence studied Physics at the University of Melbourne and completed his PhD in 1973 in plasmon studies of metals. Following a postdoctoral position at Oxford University, Professor Spence took up a Faculty position at Arizona University, where he spent over 40 years. John Spence made innovative, world-leading contributions to biology and materials science. He co-led the team which conceived the first application of X-ray free-electron lasers (XFEL) to structural biology and pioneered femtosecond serial crystallography. He was also a world leader in the development and application of atomic-resolution electron microscopy. Professor Spence is survived by his wife and son.



Among John's many honours (of most interest to SCANZ members) was the 2020 Gregori Aminoff Crystallography Prize, awarded by the Royal Swedish Academy of Sciences. This he shared with Henry Chapman and Janos Hadju for opening the door to serial femtosecond crystallography using X-ray free electron lasers.

VALE A/PROFESSOR CHARLES COLLYER



Our community learned very recently of the passing of Charles Collyer. Charles completed his undergraduate studies at Flinders University and then a PhD under the supervision of Hans Freeman at the University of Sydney. Charles was one of the first group of students to complete a doctorate in protein crystallography in Australia. In the early 1990's Charles relocated to Imperial College, London for a postdoctoral appointment with Professor David Blow, one of the celebrated pioneers in the field of protein crystallography. In his time at Imperial College, Charles contributed an important new understanding of the mechanism of the enzyme, xylose isomerase. Following his time in London, Charles relocated to Milan to head the newly established protein structure research laboratory of the pharmaceutical company, Farmitalia. In 1996 Charles was recruited by the Department of

Biochemistry at the University of Sydney, as a Senior Lecturer where he remained until his retirement as an Associate Professor. During this time his principal research focus was on the gingipain enzymes of the oral bacterium, *Porphyromonas gingivalis*. The work resulted in a number of significant publications and provisional patents. I first met Charles as a PhD student when I was solving structures of rubredoxin in collaboration with Mitchell Guss. In fact, Charles gave me my first opportunity of a post-PhD research position at the end of my candidature – something I will always be immensely grateful for. Many wonderful friends and colleagues including Charlie Bond, Matt Wilce, Barry Fields, Mihwa Lee, David Jacques, Cy Jeffries, Anthony Duff, Aaron McGrath, Miriam Rose-Ash, Nan Li, were part of the Guss and Collyer groups during those years and I'm sure we all treasure very fond memories of those times in Sydney. Charles is survived by his wife Ros and children Bryn and Rosie.

Megan Maher

NEW MEMBERS WELCOME!!!

SCANZ welcomes new members, particularly from New Zealand. Benefits of membership include:

- Global representation through ASCa, IUCr and STA*
- Prestigious Awards*
- Discounted conference fees*
- Exceptionally generous student travel support*
- Information and job vacancy sharing*
- Membership from as little as \$10 per year for students*

Membership applications can be made through the SCANZ website, contact your friendly SCANZ committee members if you require a sponsor for your application.

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

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