



## President's Address

Dear AXAA Members and Friends,

On behalf of the AXAA National Council I'd like to wish you and your loved ones good health as the COVID-19 pandemic continues to play havoc on 2020.

The election of a new National Council (for the period 2020-2023) was to take place at a General Meeting to be held at AXAA-2020, but this will be postponed until the second half of 2020. We will continue to monitor the state border closure situation and gathering size restrictions within states, and decide on the most appropriate way forward with the General Meeting. The outgoing National Council can make three nominations for the new Council, and these were confirmed at a National Council meeting held on 18<sup>th</sup> February this year. They are: for President, Jessica Hamilton (Australian, Synchrotron, ANSTO); for Treasurer, Sally Birch (CSIRO); and for Secretary, Anita D'Angelo (Australian Synchrotron, ANSTO). The AXAA National Council consists of a President, Vice-President, Secretary, Treasurer and not less than two other people. Nominations are also accepted from the AXAA membership, by email to the current AXAA Secretary Mark Styles, until one week before the date of the next General Meeting (which is TBA).

In my address in the April 2020 Newsletter I mentioned that the selection process for three prestigious awards – the Keith Norrish AXAA Award for Excellence in X-ray Fluorescence Analysis, the Bob Cheary AXAA Award for Excellence in Diffraction Analysis, and the Malvern Panalytical Award for Excellence in Analysis by an Early Career Scientist – was nearing completion. These awards were due to be presented at AXAA-2020 but, due to the COVID-19 cancellation of AXAA-2020, these awards will now be presented at an event in the future (depending on the aforementioned border closure situation and gathering size restrictions). Thanks to Malvern Panalytical for

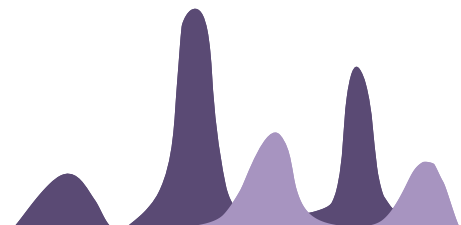
sponsoring the Early Career Scientist Award (\$2000, to be used for professional development). The selection process for each award has been completed and the recipients are:

**Keith Norrish AXAA Award for Excellence in X-ray Fluorescence Analysis** – Ms Sally Birch, CSIRO Mineral Resources, Urrbrae, SA. For significant long-term contributions to XRF analysis, which perpetuates the contribution that Keith Norrish made to the field. Sally's work has made a significant contribution internationally to the development of iron ore analysis methods using XRF, in particular, and is clear demonstration of fulfillment of the principal criterion for the award (the excellence of the nominee's development of high-impact, innovative analysis methods and their take-up by the scientific community).



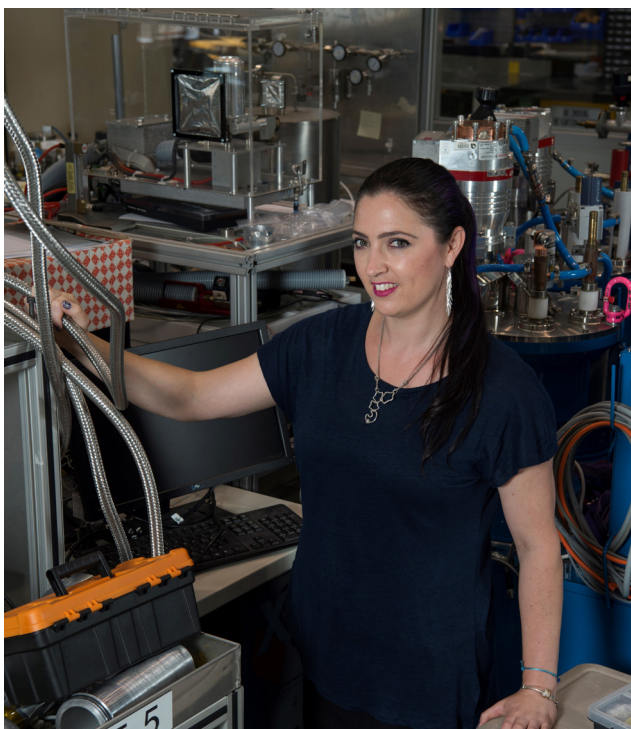
*Figure 1. Ms Sally Birch, recipient of the Keith Norrish AXAA Award for Excellence in X-ray Fluorescence Analysis.*

**Bob Cheary AXAA Award for Excellence in Diffraction Analysis** – Professor Vanessa Peterson, Australian Centre for Neutron Scattering, ANSTO, Lucas Heights, NSW. For significant long-term contributions to diffraction analysis, which perpetuates the contribution that Bob Cheary made to the field.



Along with Vanessa’s role in the development, commissioning and operation of powder neutron diffractometers at the Australian Centre for Neutron Scattering, her work in functional materials characterisation has made a significant contribution internationally and is clear demonstration of fulfillment of the principal criterion for the award (the excellence of the nominee’s development of high-impact, innovative analysis methods and their take-up by the scientific community). Whilst not an essential criterion, Vanessa has made long-term outstanding service to AXAA.

on a wave-length dispersive XRF instrument which will give the resolution of a traditional WDXRF, with the speed of an energy-dispersive instrument. Brianna’s research is focussed in XRF, yet shows a deep understanding and appreciation of the fundamental physics involved in the measurements, in conjunction with the knowledge to bring forward applications of these techniques in the Australian context.



*Figure 2. Professor Vanessa Peterson, recipient of the Bob Cheary AXAA Award for Excellence in Diffraction Analysis.*



*Figure 3. Doctor Brianna Ganly, recipient of the Malvern Panalytical Award for Excellence in Analysis by an Early Career Scientist.*

**Malvern Panalytical Award for Excellence in Analysis by an Early Career Scientist** – Dr. Brianna Ganly, CSIRO Mineral Resources, Lucas Heights, NSW. For outstanding application of analytical technique(s) so as to achieve significant impact in a field of endeavour. Brianna’s work on particle size analysis by XRF allows for the correct elemental abundances to be calculated in a flowing mineral slurry, and has resulted in an Australian patent application. Brianna has contributed to fundamental measurements on X-ray emission spectra for the elements Er to Au, finding significant errors in the current databases. These new values contribute to an industrial project for measuring gold at ppb levels. Brianna is working

Congratulations to each of our Award winners! Sally, Vanessa and Brianna are the first female recipients for each award.

Nathan Webster

AXAA President

## **AINSE Online Winter School: Connecting students and researchers across Australia and New Zealand**

*Michael Rose, AINSE*

The annual AINSE Winter School offers a once-in-a-lifetime opportunity for senior undergraduate students to discover opportunities for future projects in nuclear science and related research fields. Since 1997, the school has allowed students across Australia and New Zealand to go behind the scenes with ANSTO's landmark research facilities and connect with ANSTO researchers to discuss future Honours and postgraduate research opportunities.

The 24<sup>th</sup> AINSE Winter School, held during the week of Monday 6<sup>th</sup> July, saw a record 80 students from 34 AINSE member institutions participate. Due to the ongoing COVID-19 pandemic, the 2020 Winter School was run as an entirely-online event for the first time in the school's history.

On Monday 6<sup>th</sup> July, students had the opportunity to join the ANSTO Discovery Centre for a virtual tour of ANSTO's unique facilities, including the OPAL multipurpose reactor at Lucas Heights. Students were able to view footage of the reactor in operation while the Discovery Centre team explained precisely how the neutrons produced in OPAL were used to create medical radioisotopes, produce high-quality doped silicon, and deliver neutron beams for use in research across a multitude of scientific fields.

The Winter School was officially opened by AINSE Managing Director Michelle Durant on the morning of Tuesday 7<sup>th</sup> July, with students joining the school online via the Zoom videoconferencing platform. ANSTO experimental officer Brett Rowling delivered an informative Acknowledgement of Country that provided a history of Australian science over the past tens of thousands of years on the lands around ANSTO campuses.



**Figure 4.** Participants of the Online AINSE Winter School 2020.

After the opening, Dr. Simone Richter, Group Executive of ANSTO’s Nuclear Science & Technology and Landmark Infrastructure (NSTLI), presented students with an overview of NSTLI platforms and research activities. Students then engaged with ANSTO researchers and research theme leaders through a series of interactive presentations and panel discussions. Over the course of the day, these sessions provided deeper insights into ANSTO’s research activities in the Environment, Human Health and Nuclear Fuel Cycle research themes, and the capabilities of the unique research infrastructure supporting these activities. The day concluded with an online social evening to provide students with an opportunity for networking with their like-minded peers across two countries.

The interactive ANSTO Facility Sessions – the central activities of the Winter School – ran throughout Wednesday 8<sup>th</sup> and Thursday 9<sup>th</sup> July. These sessions, delivered by ANSTO researchers working within each facility, gave students a unique behind-the-scenes perspective of the research facilities they had learned about on the previous day, including the Australian Synchrotron, Australian Centre for Neutron Scattering, Centre for Accelerator Science, Isotope Tracing in Natural Systems laboratories, and Nuclear Materials and Electron Microscopy laboratories. Students also had the opportunity to hear from representatives from

the Women in Nuclear (WiN) Australia Chapter and the Australian Young Generation in Nuclear (AusYGN).

The final evening of the Winter School was devoted to the Research Roundup Networking Event, which gave students the opportunity to connect with established ANSTO researchers through four rotating selections of over 20 simultaneous online meetings each, in order to ask detailed questions about ongoing research projects at ANSTO in a small-group setting. The connections formed over the course of the evening have already led to planned collaborations between ANSTO researchers and Winter School students on their honours and postgraduate research projects, and we look forward to seeing many more collaborations arise out of this evening in the future.

Following this networking event, the Winter School was closed by AINSE president Prof. Ian Gentle and ANSTO CEO Dr. Adi Paterson, who delivered an inspiring address on the need for students to develop professional networks and “embrace the new” as they began their research careers.

AINSE would like to thank all the ANSTO speakers, Facility Session organisers and Research Roundup participants for their key role in making the first online Winter School a success, and we hope to see participating students back at ANSTO for their research projects in the coming years.



**Figure 5.** The interactive online sessions gave students a chance to visit ANSTO facilities and laboratories from afar.

## #TheLightStuff Online Lectures on materials science with scattering and diffraction

The Bundesanstalt für Materialforschung und -prüfung (BAM) has teamed up with the Diamond Light Source to bring you an ongoing series of online lectures. The lectures focus on early career researchers in materials science using scattering and diffraction techniques as part of their research. The talks are intended to provide an insight into the various uses, developments and theory of the scattering and diffraction techniques.

Lectures are recorded and made available at the LightStuff YouTube channel:

<https://www.youtube.com/c/theLightStuff/videos>

Scheduled lectures are posted here, where you can register to attend via Zoom:

<https://www.bam.de/Content/EN/News-announcements/2020/2020-03-23-the-light-stuff-online-lectures.html>

## Online XRD and XRF workshops returning in 2020!

### Online courses in XRF or XRD:

- Start at any time
- Self-paced instruction to accommodate the needs of busy people
- Study materials comprise a set of modules; with an assignment being set for each module
- Feedback on the assignments provides excellent mentoring.

### Personalised mentoring:

Receive one on one mentoring in Rietveld analysis. This includes learning how to efficiently analyse XRD patterns, and will be tailored to your experience levels and preferred analysis software.

*Brian O'Connor is an AXAA Life Member with over 50 years expertise in crystallography-based methods including XRD, XRF, synchrotron and neutron techniques.*

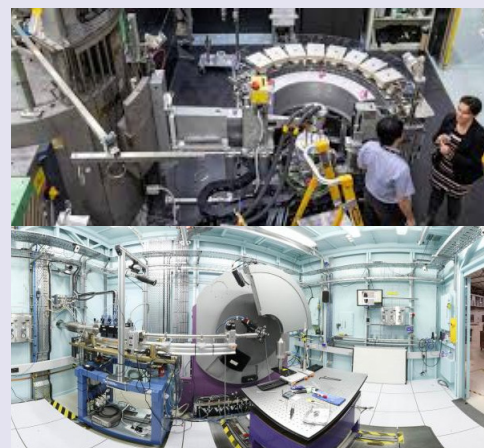
**For further information and enrolment, contact Brian O'Connor at [brian\\_oconnor@iprimus.com.au](mailto:brian_oconnor@iprimus.com.au) (Tel 0407 775 034)**

## ANSTO Powder Diffraction School

The ACNS Echidna and Wombat team are again working with the staff of the Powder Diffraction beamline of the Australian Synchrotron to bring our annual 'Powder diffraction analysis for beginners' course to life.

In the theme of 2020, the school will now be virtual, and will make access to lectures available (and free) to all who register. We hope also to run the practical elements of the course virtually, but will be restricting the numbers to these sessions.

The dates of the course is set for 6<sup>th</sup>-8<sup>th</sup> October 2020. Keep an eye on the ANSTO What's on page [<https://www.ansto.gov.au/whats-on>] and [AXAA website](#) for further announcements for registration.



## Join DECTRIS Application webinar series: six events – six different applications

The DECTRIS application webinar series is our way to stay connected and hear from our users about their research and results.

Join us and learn about the latest developments in different techniques, discuss the impact that these developments could have on the scientific community, or ask questions about the experimental setups.

[Register here](#)



## Bruker featured webinars: Not Just for Experts: Pair Distribution Function Analysis in the Home Lab

Atomic [pair distribution function \(PDF\)](#) analysis is a powerful technique for studying the short and intermediate range structure of a wide range of materials, particularly glasses and nanomaterials. Over 2,000 people participated in this 45-minute webinar and discovered how to expand the capabilities of their diffractometers and use PDF analysis when traditional techniques fall short.

View the recording [here](#).

## XRF: Tips and Tricks for Making Your Own Secondary Standards for XRF



During this 60-minute educational webinar, experts from FLUXANA and Bruker AXS will present strategies for getting the best results out of FP-based methods on your XRF spectrometer. They will discuss what to do when no CRMs are available for the material you wish to analyze and describe how to use wide oxide calibrations to create your own secondary standards, to then allow rapid screening and product quality control.

Register [here](#) to watch the webinar on demand.

View a comprehensive list of our other recent and upcoming online events [here](#).

## Online event: Behind the Scenes of Big Science (ANSTO)

What happens when your science is too big for your lab? Well, then you head to ANSTO, who run some of the biggest science machines in Australia. This national science week we're giving the public a unique opportunity to see behind the scenes at the Australian Centre for Neutron Scattering, online and for free! See the different kinds of instruments the centre hosts, and hear the amazing outcomes that they bring. Five of our scientists will each walk you through their world-class science machines, and after there will be a live Q&A where you can quiz them more. Join us on the 19<sup>th</sup> August for this rare opportunity to see behind the scenes of this big science factory.



Date: Wed 19<sup>th</sup> Aug at 7.00pm - 8.30pm

Link: <https://www.ansto.gov.au/whats-on/behind-scenes-of-big-science>

## Surface Analysis Scientist - The University of Queensland

Closing date: August 18<sup>th</sup>

Link: <http://search.jobs.uq.edu.au/caw/en/job/509618/surface-analysis-scientist>

## MEX Beamline Scientists (two positions) - Australian Synchrotron (ANSTO)

Closing date: August 9<sup>th</sup>

Link: [anstocareers.nga.net.au](http://anstocareers.nga.net.au)

## ISIS Instrument Scientist - High Resolution Powder Diffraction (UK)

Closing date: August 31<sup>st</sup>

Link: [https://www.topcareer.jobs/Vacancy/irc254020\\_10734.aspx](https://www.topcareer.jobs/Vacancy/irc254020_10734.aspx)

## CSIRO Postdoctoral Fellowships

38 jobs currently posted, varying closing dates

Link: <https://jobs.csiro.au/go/Postdoctoral-Fellowships/7829300/>

# JOB BOARD

## Call for Applications for the AONSA Young Research Fellowship 2021

The purpose of the Asia-Oceania Neutron Scattering Association (AONSA) Young Research Fellowship Program is to support highly talented young scientists with leadership potential in the Asia-Oceania region, helping them to develop their career and expertise in neutron science and technology. The Program will provide financial support for Fellows to visit major neutron facilities in the region for collaborative research using neutrons.

More information can be found here: <http://aonsa.org/aonsa-young-research-fellowship/>

Closing date: August 31<sup>st</sup>



## AXAA Website and Contacts

Please visit our website, [www.axaa.org](http://www.axaa.org), for further information, or follow us on Twitter [@axaa\\_org](https://twitter.com/axaa_org).

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William Rickard (Curtin University, WA)  
Talitha Santini (University of Western Australia,  
WA)  
Brianna Ganly (CSIRO, NSW)

## AXAA Membership

All registered participants of the AXAA-2017 conference are automatically granted AXAA membership for 3 years. Alternatively, new memberships can be obtained free of charge, by making an application to the National Council.

Candidates should send the membership form from the [AXAA website](http://www.axaa.org), and a short statement about how they intend to contribute to the organisation, to the National Council Secretary Mark Styles.

## AXAA Resource Centre

There are a range of resources available on the [AXAA website](http://www.axaa.org), including video recordings of the two Public Lectures at AXAA-2017, tips for Rietveld Analysis, Clay Analysis, XRF tips, and more. We welcome further contributions to our Resource Centre.

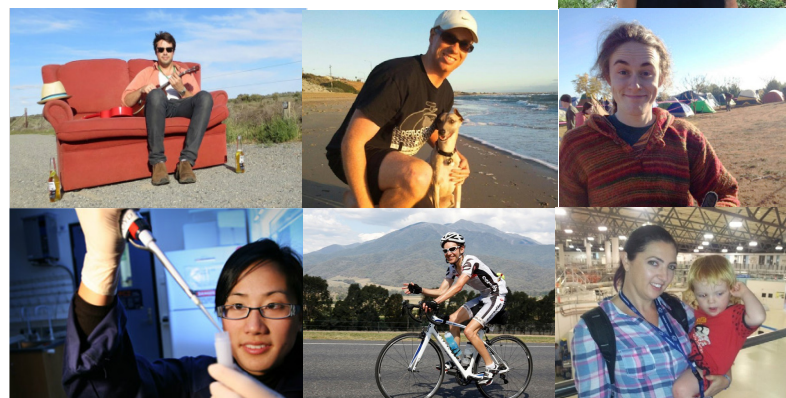
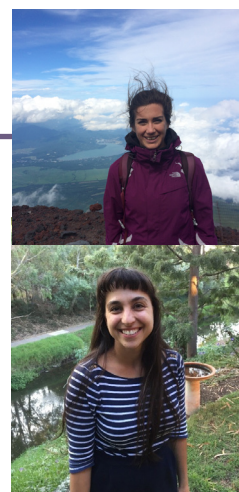
## Next AXAA Newsletter

The next issue of the AXAA Newsletter will be distributed in December 2020. Please feel free to send contributions for the newsletter to Jessica Hamilton at [ausxray@gmail.com](mailto:ausxray@gmail.com). Any comments or feedback about the Newsletter are welcome.

## A Day in the Life of an X-ray / Neutron Scientist

We are seeking posts for our 'Day in the Life' series. If you'd like to contribute, or know someone who might be interested, please contact National Council Communications Editor Jessica Hamilton at [ausxray@gmail.com](mailto:ausxray@gmail.com).

W:[www.axaa.org/a-day-in-the-life.html](http://www.axaa.org/a-day-in-the-life.html)





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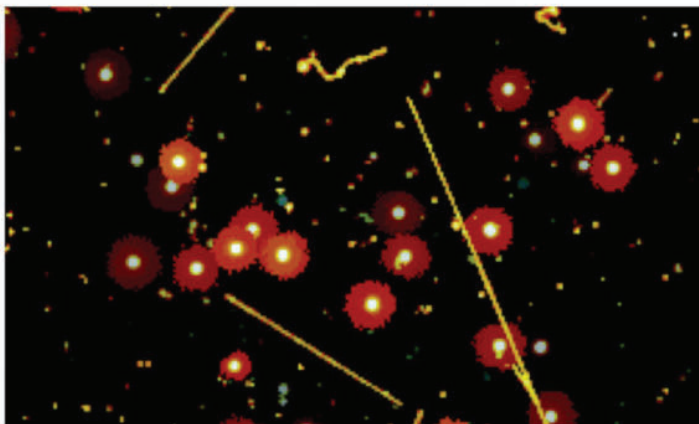
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