



NSW Branch Chair's Report 2020-2021

A key aim of the AIP is to recognize excellence – something that we do across the spectrum of physics (and science in general) – from primary school, through undergraduate and postgraduate achievement through to outreach. The Australian Institute of Physics NSW Branch congratulates all recipients for their incredible achievements – a full list of award winners is provided below.

Despite the changes and uncertainty relating to lockdowns our NSW Branch has offered a range of well attended events throughout the year.

The first was "Frontiers of Science" held at the beautiful venue at Concord Gold Club. It marked the first in-person event for quite some time and at the time there was a sense of emerging from the strange online only times of 2019. Frontiers of Science covered an expansive canvas from the future of science discussed by Dr Cathy Foley, Australia's Chief Scientist, to presenting new arithmetic from Ancient Mesopotamia. It was a wonderful and rare opportunity to reconnect with people we hadn't seen for a long time.

Space exploration featured strongly this year: firstly, during the Women In Physics Lecture Tour with A/Prof Susanna Guatelli presenting two public lectures and several school lectures on the topic of Radiation Protection for Astronauts. Secondly, by the annual Einstein Lecture with UNSW exploring "Space Weather and the Path to Mars" held on Tuesday 17 Aug with A/Prof Guatelli and Professor Iver Cairns.

Nuclear Medicine and Your Health was our topic for a panel presentation and discussion for our annual event with ANSTO. Attendees gained a fascinating insight into the local supply chain in radioactive medical agents for imaging and therapeutics – uncovering a sophisticated and finely coordinated process invisible and taken for granted by most.

In October, Physics in the Pub was Physics in the Cloud and despite being forced into another year of digital delivery, the "acts" were phenomenal and brilliantly brought together by Phil Dooley who uniquely defines this signature event.

zOOM into Physics has been a new initiative for 2021 – and something I'd like to continue in 2022 and beyond. My huge appreciation goes to the persistent panel of Kirrily Rule, Geraint Lewis and Tibor Molnar who have participated in seven zOOMs this year. Session recordings can be found in the AIP Youtube channel.

It was my pleasure and honour to coordinate our bi-annual forums with NSW university Heads of School/Department attended by most NSW universities and also Sven Rogge, our AIP President. It was, once again, a time for us to share the challenges and aspirations of current university circumstances and to provide support and fellowship to each other.

In late 2020 Tim van der Laan coordinated a series of virtual physics careers explorations showcasing a broad spread of careers for physicists. Our appreciation to the participants for sharing their career paths to inspire students:

Sherry Mayo (CSIRO), Narelle Clark (CEO internet association of Australia), Helen Maynard-Casey (ANSTO), Julia Mitchell (Sitael Australia), Lucy Sim (Queensland Health), Sarah Lugay (Cyber Security EY), Mark Turner (CEO Turner Laser systems), Victoria Coleman (National Measurement Institute), Shane Huntington (University of Melbourne), Matthew Lay (High school physics teacher and IP attorney).

Our final event in 2021 was the Postgraduate Awards Day in which NSW universities put forward their most deserving researchers who present a short summary of their work. It's always a tough task judging a winner and this year was no different. Our congratulations to Joe Zhiyu Chen who received the AIP award and Zain Mehdi who was awarded the Jak Kelly Award from our event partner, the RACI.

I would like to make special thanks to the wonderful NSW committee team:

Deputy Chair:	Dr Timothy Van der Laan
Secretary:	Dr Frederick Osman
Treasurer:	Dr Phil Burns
Committee Member:	Professor Michael Lerch
Committee Member:	Associate Professor Matthew Arnold
Committee Member:	Associate Professor Graeme Melville
Committee Member:	Dr Danica Solina
Committee Member:	Dr Marc Gali-Labarias

Last year in my report I wrote: *It is a pleasure to work together with shared purpose – and though it starts with our common interest in physics, it is not unusual that we come to consider each other as friends.*

Our committee was devastated last week to learn of the passing of Dr Les Kirkup – a past committee member and a dear friend to many of us over the years. Les was a leading light in physics education recognized nationally and internationally having devoted his life to excellence in education. Our NSW committee typically shares a meal together following committee meetings and so we have treasured memories of dinners with Les over the years. At the next occasion the committee can gather for dinner, we will recount our fond memories of Les and raise a glass in his honour.

Scott Martin FAIP
AIP NSW Branch Chair

Australian Institute of Physics New South Wales Awards in 2021

AIP NSW Community Outreach to Physics Award

is presented to an individual that seek to achieve activities that engage our community and contribute to public engagement within physics. In its eight year, the AIP NSW Branch congratulates **Professor Andrea Morello** from the University of New South Wales as the very worthy recipient in 2021.

AIP NSW Annual Postgraduate Awards in Physics

are open to nominated postgraduate individuals to compete for the AIP NSW Postgraduate Medal and the Royal Society of NSW Jak Kelly prize. These awards have been created to encourage excellence in postgraduate physics research:

AIP NSW Postgraduate Physics Award Winner

Joe Zhiyu Chen, UNSW, School of Physics

AIP NSW Postgraduate: Royal Society of NSW Jak Kelly Award Winner

Zain Mehdi, ANU, Department of Quantum Science and Technology

AIP NSW Postgraduate Excellence Certificates

Congratulations to the following 2021 recipients who were nominated and participated in the NSW Postgraduate awards recognising the nominee's highest standing:

Sobia Rehman, Macquarie University, Department of Physics and Astronomy

Florian List, University of Sydney, School of Physics

Joe Zhiyu Chen, University of New South Wales, School of Physics

Zain Mehdi, ANU, Department of Quantum Science and Technology

Matthew James, University of New England, School of Science and Technology, Physics and Electronics

Simon White, UTS, School of Mathematical and Physical Sciences

Ankit Shrestha, University of Wollongong, School of Physics/ISEM

AIP NSW Best Graduating Student Prizes

The NSW best graduating student prizes acknowledge individuals nominated by each Physics Institution, with superior performance in their studies:

Philip Mai, University of New South Wales, School of Physics

Bailey Thompson, University of Wollongong, School of Physics

AIP NSW Most Outstanding Physics K-12 prizes with the Science Teachers Association of NSW Young Scientist Awards

The branch committee assesses and awards prizes to the top three projects in the theme "Drones, Droids and Robots":

First prize: Yasiru Puhule-Gamayalag, Cherrybrook Technology High School
Project: Automated Hand Injury Assessment and Treatment Device (MedLab)

Second prize: Max Zhao, Barker College
Project: Remote Control Raft Cleaner

Third prize: Thaddeus Candra, Redeemer Baptist School
Project: The Mars Ninja Warrior Conquer Mount Midoriyama