

Australian Nuclear Research and Education Network (ANREN) Annual Meeting 2026



Speaker biographies

DAY 1 WELCOME TO ANREN

Julianne Dougherty

Strategic Partnership Manager, Nuclear Stewardship Network (NSN), Australian National University & Secretariat, ANREN

Julianne Dougherty is the Strategic Partnership Manager for the ANU Nuclear Stewardship Network (NSN) and provides secretariat support for the Australian Nuclear Research and Education Network (ANREN). She conducted experiments at nuclear facilities in the US and UK during her PhD in chemistry and has a Master of National Security Policy. She worked for many years in government as a forensic scientist in ACT Health and the Australian Federal Police (AFP), then as the Assistant Director of the Chemical Weapons Convention Implementation Section at the Australian Safeguards and Non-Proliferation Office (ASNO). She joined the university sector in 2021 just prior to AUKUS being announced and has since worked with nuclear scientists, engineers and policy experts to increase nuclear education and research training with the aim to build nuclear literacy in Australia.

Freyja Peters

Senior Specialist - Research Development and Strategy, Metallurgy and Corrosion Cluster, Department of Materials Science and Engineering, Monash University

Freyja Peters has worked in the area of nuclear science and engineering research for over 15 years, including managing one of the UK's largest nuclear research and training centres, and the UK's largest university research program to-date on irradiation damage. Since moving to Australia and to Monash in 2023, a key part of her portfolio has focused on AUKUS, and she is one of the founding members of the Advanced Materials & Manufacturing Alliance: a cross-university partnership aimed at collaboratively pre-empting and addressing the research and training needs around AUKUS Pillar 1.

Elizabeth Williams (Chair)

Associate Professor and Nuclear Systems Discipline Lead, ANU School of Engineering

Liz is a multi-disciplinary academic with a background in nuclear physics, applied nuclear science,

and safety-critical systems design, with a focus on human and organisational factors. She led the development of the nuclear systems major at ANU, the first provisionally accredited engineering offering with a nuclear specialisation in Australia. Liz also recently completed a university diploma in international nuclear law (via the International School of Nuclear Law, run by the Nuclear Energy Agency in collaboration with University of Montpellier). She also created, hosts, and produces the Nuclear Matters podcast for the ANU.

DAY 1 KEYNOTE

Michael Lerch (Chair)

Professor and Interim Executive Dean, Faculty of Engineering and Information Sciences, University of Wollongong

Michael Lerch is the Faculty of Engineering and Information Sciences Interim Executive Dean at the University of Wollongong (UOW). He is also a UOW Chair Professor of Medical Physics within the School of Physics and Deputy Director of the Centre for Medical Radiation Physics (CMRP). Michael is a leading experimental physicist whose expertise in advanced materials, radiation interactions, and solid-state systems underpins innovation in next-generation technologies in radiation medicine. Michael, a founding member of the CMRP since 2000, leads the CMRP Radiation Detection and Instrumentation Theme and to date has supervised 50 HDR candidates to completion, and contributed to over 250 internationally refereed journal publications.

Todd Mansell

Professor and Foundation Director, Australian Defence Technologies Academy
Adelaide University

Professor Todd Mansell is the Foundation Director of the Australian Defence Technologies Academy (ADTA) at Adelaide University. He is a Defence leader with more than 36 years of experience spanning defence research, development, acquisition and operations analysis.

He was previously Technical Director at the Australian Submarine Agency (ASA) and responsible for establishing it as an authorized submarine engineering organisation, as well as developing and applying the science, technology and innovation base Australia requires to be a safe and effective independent owner/operator of our nuclear-powered submarine capability.

He holds a PhD in Artificial Intelligence from the University of Melbourne and is a graduate of the Harvard Business School, Advanced Management Program (AMP188).

Professor Mansell's contribution to Defence has been recognised with the Minister for Defence, Award for Scientific Achievement.

Prior to his current role, Prof Mansell was posted at The Boeing Company (USA), where he worked alongside the Chief Engineer and his leadership team on engineering realignment, innovation, supply chain and R&D transformation. He has also led 4 different research divisions in Defence Science and Technology Group, and acted as the Chief Defence Scientist.

PANEL 1

Tony Hooker (Chair)

Associate Professor and Director, Centre for Radiation Research, Education and Innovation (CRREI), Adelaide University

Tony is a radiation biologist and Director of the Centre for Radiation Research, Education and Innovation (CRREI) at Adelaide University. His research focuses on the mechanisms and health effects of radiation-induced damage, particularly at low doses, and spans radiation biology, physics, chemistry, geology, and risk communication. Before returning to academia in 2019, he spent 12 years as South Australia's Principal Radiation Health Advisor, providing expert advice to government, ministers, and the public. Tony is a Fellow and Past President of the Australasian Radiation Protection Society and has led or contributed to major research programs and grants exceeding \$30 million. He serves on national and international radiation and emergency management committees, consults to the International Atomic Energy Agency, and represents Australia on the OECD Nuclear Energy Agency Low-Dose Research Coordination Group. He teaches across physics, engineering, health, and medical science disciplines.

Sarah D'Ardenne

Head of Nuclear Capability and Culture, ASC & Executive of Women in Nuclear, Australia

Sarah has a background in WHSE, Risk, governance and compliance roles working in various industries including mining, oil and gas, agriculture and defence. A background specifically in chemicals and chemical management led to work with radioactive source handling for mining exploration and a short time spent with the regulator in Australia (ARPANSA) has provided Sarah with understanding of radiation safety and requirements. Sarah also worked for several years in a training manager role delivering chemical management and risk training to clients globally. Having worked at ASC for almost 5 years Sarah has been involved in workforce planning, project management, WHSE and now Nuclear capability.

Pamela Naidoo-Ameglio

Director at Exige & President of Women in Nuclear, Australia

Pamela is an executive leader, scientist, independent director, mentor and advocate for STEM. She has led mining and nuclear safety and operations, major projects, international cooperation initiatives, and capacity building across government, industry and research. Pamela has held leadership positions and implemented technology at South 32, BHP and Rio Tinto. She previously spearheaded the OPAL research reactor, nuclear medicine manufacturing facilities and radioactive waste operations at ANSTO. Pamela is a Fellow of ATSE, and currently a member of ARPANSA's Radiation Health and Safety Council and the Australian Museum's Science Advisory Board.

Todd Mansell

Professor and Foundation Director, Australian Defence Technologies Academy,
Adelaide University

Biography above.

Gordon Thorogood

Senior Principal Research Scientist, Nuclear Fuel Cycle Research Group, ANSTO

Honorary Professor, Australian National University School of Engineering

Visiting Professor, University of Wollongong

Adjunct Professor, Nagaoka University of Technology (Japan) Graduate School of
Engineering

Gordon is a Senior Principal Research Scientist in the Nuclear Fuel Cycle Research at ANSTO. He is currently assigned to the Nuclear Fuel and Waste Forms group and has been involved with Nuclear Materials research at ANSTO since 1989. While at ANSTO he has conducted research in solid-state chemistry/physics with a focus on radionuclides produced via the nuclear fuel cycle. His expertise is in solid-state chemistry, crystallography, X-ray diffraction, neutron diffraction, surface science, superconductors, nuclear waste forms, radionuclides and their production and hard condensed matter physics. He has contributed to approximately 125 publications, two book chapters, and two patents, serves as Editor of the Journal of Asian Ceramic Societies, Guest Editor of Frontiers in Chemistry, Associate Editor (Solid State Chemistry) Frontiers in Chemistry, and Review Editor (Nuclear Materials) Frontiers in Nuclear Engineering. He is also an Adjunct Professor at the Nagaoka University of Technology, Japan; Visiting Professor at the University of Wollongong, Faculty of Engineering, and Information Sciences; and Honorary Professor at the Australian National University, School of Engineering.

PANEL 2

Elizabeth Williams (Chair)

Associate Professor and Nuclear Systems Discipline Lead, ANU School of Engineering
Biography above.

Kirsty Braybon

Adjunct Lecturer in Nuclear Law, Adelaide University

Kirsty leads the postgraduate Nuclear Regulatory Law program. Developed at the request of the Department of Defence, the program provides specialist education to students, members of the Australian Defence Force, government officials and professionals supporting Australia's AUKUS enterprise. Her teaching encompasses nuclear safety, security, safeguards, radioactive waste management, liability, transport and the emerging regulation of naval nuclear propulsion in Australia.

Kirsty is a PhD candidate researching Australian nuclear law and regulatory reform. She holds a Bachelor of Laws from Flinders University, a Master of Laws and Higher Degree of Research from UWA, and a Graduate Diploma of International Nuclear Law from the University of Montpellier. Her teaching and research are informed by legal practice, including as the inaugural General Counsel of the Australian Radioactive Waste Agency and as a legal and regulatory advisor on AUKUS and emerging nuclear programs with Braybon Advisory.

Jacob Home

Frazer-Nash Australia

Jacob is a nuclear engineering professional with 13 years experience in the UK defence and civil nuclear sectors. He currently works for Frazer-Nash Australia, a KBR company, supporting the Australian nuclear powered submarine programme. His past experience includes working to deploy a nuclear power reactor in North Wales UK, the UK nuclear defence programmes and working within government to advise on Small Modular Reactors and Advanced Modular Reactors. He has a particular focus on civil-defence cross collaboration and supporting the next generation of nuclear professionals.

Fabien Medvecky

Associate Professor, Centre for the Public Awareness of Science, Australian National University

Fabien Medvecky is an Associate Professor in science communication with graduate degrees in philosophy and economics. He brings these fields into his work on how knowledge, and especially scientific knowledge, is discussed, considered, and shaped in conversations between experts and non-experts. As most of our social decisions (such as decisions about health, energy or the

environment) occur at the intersection between science and social values, he is especially interested in on the ethics of science communication and social interactions around knowledge in decision-making. Fabien is currently the President of PCST (the Network for the Public Communication of Science and Technology), the international association for science communication.

Maria Rost Rublee

Professor of International Relations, University of Melbourne

Maria has academic and professional experience in the field of nuclear politics, including nuclear proliferation, nonproliferation, deterrence and disarmament; nuclear security culture, nuclear stewardship and social licence; and the social construction of nuclear issues. Her research includes an award-winning monograph, two edited books, and over 40 articles and book chapters. Her work has been funded by over \$2.5 million in competitive grants from NATO, the U.S. Institute of Peace, and the governments of Norway, Canada and Australia. Rublee's professional contributions have been recognised by the Australian Political Science Association's Academic Leadership Award and selection to the CSIS Top 50 National Security & Foreign Affairs Leadership List. She is President of Women in International Security-Australia and serves on the editorial boards of *International Affairs*, *Contemporary Security Policy*, *Nonproliferation Review*, and the *Australian Journal of International Affairs*. She holds a Ph.D. from George Washington University.

ACTIVITY 1

Michael Preuss

Professor, Materials Science and Engineering, Monash University

Professor Michael Preuss is a materials engineer with more than two decades of leadership in nuclear materials research across the UK and Australia. At Monash University, he is Director of Research Infrastructure in the Faculty of Engineering and academic lead for AUKUS. At the University of Manchester, with which he remains affiliated, he helped rebuild the UK's light-water reactor materials capability, served as Co-Director of the Rolls-Royce Nuclear University Technology Centre, and was strongly involved in Centre for Doctoral Training. He later led major multi-institutional nuclear research programmes, including the MIDAS Centre of Excellence in nuclear fuel cladding and was part of a senior academic team developing the Royce Institute, UK's National Institute for Materials. Michael has extensive experience with neutron and synchrotron facilities, having chaired the Scientific Advisory Committee of the European Spallation Source and served on advisory and access panels internationally. He is Chair of the Australian Neutron Beam Users Group and was awarded the ASTM Kroll Medal for lifetime achievement in zirconium-based nuclear fuel cladding research.

Pejman Rowshan Farzad

Associate Professor, School of Physics, Mathematics and Computing, University of Western Australia & UWA Defence and Security Institute

Associate Professor Pejman Rowshan Farzad is the Medical Physics Program Chair at University of Western Australia (UWA) and a multi award-winning educator, recognised as a finalist for the 2024 State STEM Educator of the Year.

He also serves as a Director of the Centre for Advanced Technologies in Cancer Research, where he contributes to advancing innovation in cancer imaging and therapy. His expertise spans medical physics, including proton cyclotron engineering and medical radioisotope production, nuclear medicine, radiation therapy, radiation safety and protection, Monte Carlo modelling, and the application of artificial intelligence and quantum computing in medicine. His research focuses on developing advanced technologies and computational approaches to improve medical imaging, cancer diagnosis, and radiation therapy.

DAY 2 KEYNOTE

Michael Preuss (Chair)

Professor, Materials Science and Engineering, Monash University

Michelle Durant

Managing Director, Australian Institute of Nuclear Science and Engineering (AINSE)

Michelle has been instrumental in leading AINSE in the development of new programs to further enhance collaboration opportunities for students and researchers. AINSE plays a key role in Australian and New Zealand for enhancing collaboration with nuclear science, engineering, and other related areas with membership from ANSTO, CSIRO, AtkinsRéalis and 38 universities across Australia and New Zealand.

Michelle has a wide range of leadership experience prior to AINSE working both nationally and internationally in Australia, Japan, and USA. Michelle has worked at the Investigator Science and Technology Centre in Adelaide, the University of California Berkeley, the University of Alaska, and the Australian National Maritime Museum and now AINSE. Michelle holds a Bachelor of Science, Bachelor of Financial Administration, and a Graduate Diploma in Applied Corporate Governance. Michelle is a Fellow of the Governance Institute of Australia and a Graduate of the Australian Institute of Company Directors.

PANEL 3

Fabien Medvecky (Chair)

Associate Professor, Centre for the Public Awareness of Science, Australian National University

Biography above.

Geoff Currie

Professor, Nuclear Medicine, Charles Sturt University; Professor in Radiology, Texas Tech University; Professor in Radiology at Baylor College of Medicine, Texas

Geoff has 40 years in the nuclear medicine sector that includes public and corporate consultancies across a diverse range of the nuclear sector from production, through emergency response to waste management. He established and delivers the Bachelor of Nuclear Science and Safety at CSU, and the ASNO-funded CSU/ANU collaboration for development and delivery of the Graduate Certificate in Nuclear Safeguards and Security.

Mitra Safavi-Naeini

Senior Physicist and Research Lead, Human Health, Australian Nuclear Science and Technology Organisation

Mitra is a prolific researcher in the field of particle physics and medical radiation physics. Her two main research areas are: radiotherapy (proton and heavy ion therapy, brachytherapy, photon therapy) - particularly in relation to treatment methods for cancers with poor prognoses - and medical imaging quantification (with a specific focus on PET).

Mitra has a strong track record in R&D in medical radiation physics/engineering and is an expert in using analytical and Monte Carlo simulation techniques to solve medical physics problems.

Mitra is one of the co-inventors of neutron capture enhanced particle therapy (NCEPT). She has brought together a multi-disciplinary team of expert scientists with the best skills and expertise to confirm the simulation results via preclinical studies, with the ultimate goal of clinical translation. She has led and participated in all proof-of-concept experiments in Australia and Japan. Mitra has presented NCEPT to several clinical and industry stakeholders and has successfully brought together a large group of international industry and academic partners to form a consortium around the NCEPT project and its translation.

She is a member of the GEANT4 “Advanced Example” and “Physics List and Validation Tools” Workgroups and is regarded as a world-renowned research leader in the particle therapy and neutron capture therapy community.

Greg Lane

Professor and Head of Department, Nuclear Physics and Accelerator Applications, Research School of Physics, Australian National University & Chief Investigator on ARC Industrial Transformation Centre - Radinnovate

Greg is a chief investigator for Radinnovate, led by ANU and Adelaide Uni, which is cross-disciplinary in nature, ARC funded, and focuses on training “a new generation of researchers and leaders in nuclear science and radiation technology” ... with three pillars: underpinning science, technological innovation, and regulatory and social responsiveness.

Freyja Peters

Senior Specialist - Research Development and Strategy, Metallurgy and Corrosion Cluster, Department of Materials Science and Engineering, Monash University
Biography above

Jennifer Stansby

Lecturer in Nuclear Engineering at the University of New South Wales; holds a Research Fellow position with the UNSW Nuclear Innovation Centre (UNIC)

Jennifer Stansby is a Lecturer in Nuclear Engineering at the University of New South Wales and holds a Research Fellow position with the UNSW Nuclear Innovation Centre. She specializes in the fabrication and characterization of advanced nuclear fuels, often using *in situ* techniques at the Australian Centre for Neutron Scattering. Much of her work is targeted towards inspiring and educating the next generation of nuclear scientist and engineers in Australia, contributing to the country's skilled workforce needs. Jenny is the program coordinator for the UNSW Nuclear Engineering Minor which has grown from 15 to over 100 enrolments in 3 years and is a key contributor to the UNSW undergraduate Nuclear Engineering degree launched in 2026.

PANEL 4

Ed Simpson (Chair)

**ARC Future Fellow and Group Leader, Nuclear and Radiation Modelling
ANU Department of Nuclear Physics and Accelerator Applications**

Dr. Ed Simpson is an ARC Future Fellow and Group Leader for Nuclear and Radiation Modelling at the Department of Nuclear Physics and Accelerator Applications at the Australian National University. His research focuses on nuclear collisions, from fundamental quantum mechanics to astrophysics. Increasingly, his research seeks to build a bridge between foundational nuclear science and nuclear applications and technologies. He has won ~\$4M in ARC Discovery Program funding and is CI on the RadInnovate Industrial Transformation Training Centre. He teaches courses on Nuclear Technologies and Applications, and Advanced Reactor Science.

Ed is also a former Australian Science Policy Fellow, contributing to science policy at the Department for Agriculture, Water and the Environment, and the Department of Education, Skills and Employment. Here, he supported Australia's delegation to the International Panel on Climate Change and helped develop to the 2021 National Research Infrastructure Roadmap.

Ben Swinton-Bland

Senior Policy Adviser, Science and Technology Network, British High Commission, Canberra.

Dr Ben Swinton-Bland is a Senior Policy Adviser in the Science and Technology Network (STN) at the British High Commission Canberra. STN is the dedicated science diplomacy unit of the UK Government and is jointly supported by the Foreign, Commonwealth, and Development Office (FCDO) and the Department of Business, Innovation, Science, and Trade (DBIST). Ben's work currently focusses on AI policy, online safety, cybersecurity, and nuclear skills development pathways connected to AUKUS.

Prior to joining the British High Commission, Ben worked as a Policy Analyst at the Australian Academy of Science, providing independent science advice to Government on a range of issues including research infrastructure, AI, compute, and PFAS contamination. He holds a PhD in nuclear physics from the Australian National University, where his research investigated mass-asymmetric fission across the nuclide chart.

Rebecca Moores (ASNO)

Director of the Comprehensive Nuclear-Test-Ban Treaty, Disarmament and Technology Section, Australian Safeguards and Non-Proliferation Office (ASNO)

Rebecca Moores is the Director of the Comprehensive Nuclear-Test-Ban Treaty, Disarmament and Technology Section at the Australian Safeguards and Non-Proliferation Office (ASNO), where she leads strategic initiatives to strengthen Australia's regulatory impact in non-proliferation. With over fifteen years of experience spanning public and private sectors, Rebecca has held roles applying her expertise in engineering, risk management, governance, and strategic alignment to deliver high-impact outcomes.

Todd Allen

Professor and Associate Dean for Research, College of Engineering, University of Michigan

Dr. Todd Allen is Professor and Associate Dean for Research at the University of Michigan College of Engineering and a Senior Fellow at Third Way, a DC base Think Tank, supporting their Climate & Energy Portfolio. He is the Founding Director of the Fastest Path to Zero Initiative, aimed at identifying the combined technologies and social acceptance that moves towards decarbonized systems. He was the Deputy Director for Science and Technology at the Idaho National Laboratory from January 2013 through January 2016. Prior to INL he was a Professor in the Engineering Physics Department at the University of Wisconsin, a position held from September 2003 through December 2012 and again from January 2016-December 2018. From March 2008-December 2012, he was concurrently the Scientific Director of the Advanced Test Reactor National Scientific User Facility at INL. Prior to joining the University of Wisconsin, he was a Nuclear Engineer at Argonne National Laboratory-West in Idaho Falls. His Doctoral Degree is in Nuclear Engineering from the University of Michigan (1997) and his bachelor's degree in Nuclear Engineering is from Northwestern University (1984). Prior to graduate work, he was an officer in the United States Navy Nuclear Power Program.

MAPPING EXERCISE

Art Cotterell

Postdoctoral Fellow in Nuclear Law, Faculty of Law & Justice, UNSW

Dr Art Cotterell is a Postdoctoral Fellow in Nuclear Law at the UNSW Faculty of Law & Justice. His research examines the power and politics shaping the law and governance of emerging technologies, particularly nuclear, space and artificial intelligence. He brings more than a decade of experience across government and civil society to academia, including as an executive-level adviser within the Australian Government and through work in community legal centres and the sector's peak body promoting access to justice. Art holds a PhD in law, undergraduate degrees in law and social work, and is admitted as a lawyer in the Australian Capital Territory.

Kay Song

Postdoctoral Fellow, UNSW Nuclear Innovation Centre

Dr Kay Song is a postdoctoral fellow at the University of New South Wales Nuclear Innovation Centre. She completed her Bachelor of Philosophy (Honours) at the Australian National University before obtaining her DPhil in Engineering Science at the University of Oxford in 2024. She has been investigating materials for fusion and fission reactors since 2018, covering metals and alloys for plasma-facing components, structural materials, and fuel cladding. Her work combines insights from a wide range of microscopy, diffraction, and mechanical characterisation to understand irradiation damage in nuclear-relevant materials. As a part of ANREN, she is passionate about growing the nuclear sector in Australia through working with professionals across career stages and disciplines.

ACTIVITY 3

Michael Lerch

Professor and Interim Executive Dean, Faculty of Engineering and Information Sciences, University of Wollongong

Biography above

Elizabeth Williams

Associate Professor and Nuclear Systems Discipline Lead, ANU School of Engineering

Biography above

ANREN Annual Meeting Organising committee:

Monash University: Freyja Peters (chair), Hossein Masoumi, Mahmoud Mostafavi, Michael Preuss

Adelaide University: Tony Hooker, James Mcevoy

Australian National University: Julieanne Dougherty, Elizabeth Williams

University of New South Wales: Kay Song, Jennifer Stansby

University of Queensland: Stephen Wilson

University of Western Australia: Pejman Rowshan Farzad

University of Wollongong: Michael Lerch

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