



## ANSTO's National Science Week Hackathon Mentors and Design Thinking Coaches 2020

There are two types of mentors available to teams during the hackathon listed below:

1. **Hackathon Challenge Mentors** - Teams will have the opportunity to Zoom with their chosen challenge mentor to get feedback and advice on their hack on Monday. The challenge mentors sessions have a different focus to the Design Thinking mentors. This is an opportunity for teams to discuss the challenge area, relevant science and technologies, and they can see feedback on their proposed solutions. Based on the feedback teams receive from their mentors, students can revise their designs and continue to build. Click on the "Book session now" link under their short bio to book a session with the challenge mentor.
2. **Design Thinking Coaches** - These mentors will be pre-assigned to your teams and your initial Friday session with them will be arranged prior to the start of the hackathon, in alignment with the availability that you provide (see above). DTCs will act as your team's main mentor and will be present to support the team through the initial design process. They will also be available to contact via email over the weekend (maximum of 2 responses, via the teacher) and, if you wish, you may also organise an additional session with them on Monday or Tuesday, subject to their availability.

### 3. 1. Hackathon Challenge Mentors



#### Ryan Beeby - Operational Technology Team Leader

Ryan trained as a Scientist and Engineer at Monash University and works for ANSTO at Lucas Heights in Operational Technology. He specialises in application of automation technologies that allow these facilities to do what they do safely, securely and sustainably. As a Project Manager and Project Engineer, he is

responsible, as part of a team, for delivering new facilities and large capital programs, including ANM, the world's newest Mo99 processing facility. He represented Australia at a secondment to ITER, the international nuclear fusion experiment being constructed in the south of France working on the design for a novel plasma diagnostic in conjunction with Scientists from the Australian National University.

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### **Amy MacIntosh - PhD Student**

Amy is a zoologist and environmental scientist with expertise in biological sciences, biostatistics, ecological risk assessments and geographic information systems and a member at ANSTO's new Graduate Institute, currently specialising in collaborating with government agencies and stakeholders to communicate sciences to develop policy framework. Her research centres on the development of an ecology and environmental framework for decommissioning offshore oil and gas structures to better protect and conserve Australian marine life and the ocean. Amy has competed in past hackathons; NASA Space Apps COVID-19 Challenge (global finalist!) and recently won first place in the Australian and New Zealand Defence Force Trans-Tasman Hackathon.

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### **Dr. Cath Hughes - Research Sci Radiotracing & Isotope Hydrology**

Cath Hughes has broad-ranging experience in tracing the transport of water, contaminants and particulates in groundwater, reservoirs, catchments and coastal water bodies using stable and radioactive isotopes. She is working on the development of stable isotope datasets, methods and interpretations for precipitation, drinking water, atmospheric moisture and surface waters in Australia for use as tracers of past and present weather and climate patterns, hydrological processes such as recharge, evaporation and mixing in surface water and groundwater, to provide underlying datasets for traceability, isotope forensics, biosecurity, and ecology.

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### **Dr. Karina Meredith - Senior Research Scientist**

Karina is a Senior Research Scientist at ANSTO with expertise in hydrochemistry and isotope tracing in environmental systems. Her research interests lie in applying a variety of naturally occurring stable, radiogenic and cosmogenic isotopic tracers to investigate water resources within Australia. Karina's research has provided crucial information to support the management of finite water resources appropriately and sustainability. She works on a variety of interesting water projects ranging from addressing the role of water quality in Chronic Kidney Disease of Unknown Aetiology (CKDu) in Sri Lanka to understanding dissolved organic matter in groundwater to working with multidisciplinary teams who are securing Antarctica's environmental future. Karina has previous experience as a mentor and presenter for the ANSTO-UNSW H2GO Hack-a-thon 2018, which was aimed at finding solutions to improving water quality in CKDu affected regions in Sri Lanka.

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### **Nick Howarth - Cyber Security and Operational Technology Manager**

Nick is the Operational Technology Team Leader for the OPAL Research Reactor at ANSTO. Nick leads a team of engineers, responsible for the engineering, operation, maintenance and security of OPAL's operational technology systems. He has a Bachelor of Technology from Western Sydney University, is a Certified Information System Security Professional (CISSP), and is currently studying a Master of Business and Technology at the University of Technology Sydney.

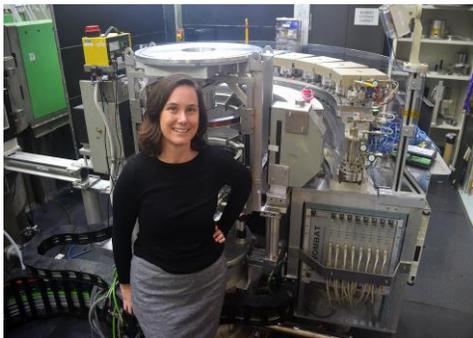
[Book session now](#)



### **Maree Stuart - Chemistry and Business**

Maree Stuart is a Fellow of the RACI and Certified Chemist. She has been an active member of RACI for over 19 years. Maree has a degree in Chemistry and specialises in Analytical Chemistry and Metrology (the science of measurement). She is also the founder and leader at MAS Management Systems, a management systems and analytical science consultancy practice. Maree specialises in business systems and compliance, and metrology of chemical and biological testing processes. Apart from her qualifications in Chemistry, Maree holds qualifications in business, politics and international relations, and law and is practising solicitor at Lab Law Pty Ltd.

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### **Dr. Helen Maynard-Casely - Senior Instrument Scientist**

Helen Maynard-Casely is an instrument scientist who is one of the team that runs the one-of-a-kind WOMBAT instrument that scatters neutrons from the OPAL reactor. In between running the instrument for the Australian and International science community, she uses the neutrons for her own research investigating the materials that make up our solar system. She has a PhD in high-pressure physics from the University of Edinburgh and has been lucky enough to have collected data in facilities all over the world, blowing up a few diamonds along the way. Always keen to tell anyone who'll listen about neutrons she tweets @Helen\_E\_MC.

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### **Dr. Maggie Aulsebrook - Radiochemist**

Maggie is a radiochemist at ANSTO who drives research in the development of radiopharmaceuticals for the treatment and diagnosis of human diseases. She specialises in the incorporation of radioactive isotopes into molecules which elicit a biological response in the body and carry radioactive isotopes to a specific organ or diseased tissues. Outcomes of the work will allow for better targeted tools for diseases in comparison to conventional methods.

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### **Dr. Mark Ho - Reactor Heat Transfer Specialist**

Mark works at the Australian Nuclear Science and Technology Organisation (ANSTO) as a reactor heat-transfer specialist and is the president of the Australian Nuclear Association [www.nuclearaustralia.org](http://www.nuclearaustralia.org). He currently supervises 3 PhD students working on advanced reactor designs and design tools.

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### **Jay Flack - Biomedical Scientist and Entrepreneur**

Jay is a senior clinical physiologist with 20 years experience in the field of respiratory medicine and sleep disorders. He works in the public and private sector, overseeing the operation of a number of medical laboratories around the country. He also has a strong interest in research, medical technology and device design and works as a consultant to a number of medical device companies including Resmed. He is the founder and chief scientist of Hyron Scientific, one of the foundation members of ANSTO's deep technology incubator, Nandin. Jay's team has recently entered three hackathons, winning first place in two of them and is a finalist awaiting the verdict in the other. He is also interested in developing self-sufficiency and off-grid sustainability solutions.

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### **Karthik Gopi - Environmental Scientist**

Karthik is an environmental scientist with expertise in marine biology and statistical modelling from the University of New South Wales (UNSW). He is an AINSE Residential Scholar and his PHD is focused on conducting seafood provenance research at the Australian Nuclear Science and Technology Organisation (ANSTO) along with UNSW, Macquarie University, Sydney Fish Market and the National Measurement Institute. His research is mainly focused on the use of isotopic and elemental fingerprinting to develop a seafood provenance model for Australia to determine the source and origin of seafood. The seafood provenance research is expected to provide valuable tools to the seafood industry to combat food fraud.

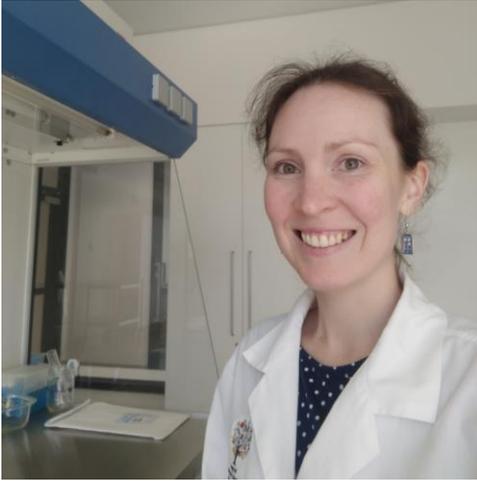
[Book session now](#)



### **Dr. Mandy Reid - Taxonomist, Malacology Collection Manager, AM**

I am a taxonomist with a focus on cephalopod diversity. I have a particular interest in cuttlefishes (Sepiidae), bobtail or bottletail squids (Sepiolidae), and pygmy squids (Idiosepiidae). My research aims to document biodiversity to inform management and conservation decisions and in the case of cuttlefishes, to produce baseline information useful for fisheries management. I have also worked on the taxonomy of velvet worms (Onychophora). I am based at the Australian Museum Research Institute where I am Collection Manager for the Malacology Collection. This is a huge collection, among the largest at the museum, comprising some 11 million mollusc and brachiopod specimens

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### **Lyndle Hardstaff - PhD student, Australian PlantBank**

Lyndle is a PhD student at the Australian PlantBank, developing ways to cryostore threatened Australian rainforest plants. She has previously worked in research teams studying plant flammability, invasive species, and the role of coastal algae in bioengineering ecosystems on rocky shores and in mangrove forests. Lyndle is also a science educator who has worked with organisations in both Australia and Indonesia, and is currently teaching at UTS and the Australian Botanic Gardens Mount Annan.

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### **Brett Giddings - Director, Sustainability Services - Sustainable Surf / SeaTrees**

Working with organizations to design, implement, measure and sell sustainability, develop innovative public-private partnerships, and lead change. Multi-disciplined sustainability, design and brand consultant, experienced at building long-term engagement with diverse stakeholders. Proven experience developing, implementing and managing programs to address multifaceted environmental and social challenges, with a strong focus on product stewardship, recycling and circular business design.

At [SeaTrees](#), Brett is responsible for managing the ongoing development and implementation of start-up non-profit's core sustainability programs: SeaTrees, The ECOBOARD Project, Waste to Waves, and Deep Blue Events.

[Book session now](#)



## **Eli Bendall - Botanic Gardens Educator and PhD Student**

I am a PhD student at the University of Wollongong and an Educator at the Botanic Gardens. I am interested in the conservation of Australia's unique flora and fauna. I specialise in forest and fire ecology, looking at the way disturbances, such as fire, influence ecological processes. My PhD project investigated the combined effects of drought, bushfire and elevated atmospheric [CO<sub>2</sub>] on the mortality and regeneration of trees in Eucalyptus forests. My work has taken me to some of the most remote wilderness areas in Australia. I am aiming to build a career as a research scientist and hope to make some important contributions to our knowledge of our precious forest ecosystems.

[Book session now](#)



### **Samantha Christie - Manager of Network Planning - Australian Energy Market Operator (AEMO)**

Samantha Christie is passionate about providing efficient, reliable and sustainable electricity. An electrical engineer by trade, Samantha is the Manager of Network Planning at the Australian Energy Market Operator (AEMO). AEMO manages electricity and gas systems and markets across Australia, helping to ensure Australians have access to affordable, secure and reliable energy. Samantha's job is to figure out how to manage Australia's electricity network as more and more renewable energy projects contribute to the grid. Samantha has also contributed to Australia's progress towards greener power in her previous role as Manager of Emerging Energy Technologies with the NSW Department of Planning and Environment.

[Book session](#)



### **Michelle Voyer - Senior Research Fellow ANCORS**

Michelle Voyer is a Senior Research Fellow with the Australian National Centre for Ocean Resources and Security (ANCORS) at the University of Wollongong. Building on a ten year career in Australian state and federal government, and marine science undergraduate training, Michelle's research now focuses primarily on ocean governance, the human dimensions of marine conservation and resource management, and the nexus of social science and policy. Her current research is exploring community based approaches to building a social equitable and environmentally sustainable Blue Economy.

## 2. Design Thinking Coaches (DTCs)

These mentors will be pre-assigned to your teams and your initial Friday session with them will be arranged prior to the start of the hackathon



### **Melanie Calleja - Masters of Design student - Swinburne University**

Melanie Calleja is passionate about spreading design thinking to everyone from multiple disciplines. Melanie has been involved with Design Factory Melbourne on many different occasions over the past few years, including being a workshop associate, research assistant, 'Global project' coach and alumni of the 'Global project' run through Design Factory Melbourne. Melanie has a background in communication design and has a strong interest in prototyping and team communication. Through the 'Global project' run through Design Factory Melbourne, she has worked on projects involving helping organic farmers and another on managing narcolepsy. Aside from her interest in design Melanie has accredit a lot of her people skills from teaching and training karate.



### **Heather Catchpole - Science Communicator**

Heather is a science writer, producer and founder of Careers with STEM, a hub for students to explore STEM careers. She's an expert at creating great videos, pitching a product and has a wide knowledge of science and technology design. She recently came third place in the global Women's Hackathon and loves collaborating with diverse groups of people on solutions for global challenges. Heather has worked with ANSTO to create virtual tours and animation of nuclear science technology and medicine, and on the Careers with STEM: Science magazine.



### **Prarthan Baxi - Alumni of Design Factory Melbourne**

Prarthan is a Fun Loving, Innovation Enthusiast, Design Thinker & Leisure Photographer. He has always been engaged towards generating value, connecting to people globally learning new methods, approaches and learning through experimenting.

This curiosity has led him to have experience in a range of fields involving start-ups, product and experience design, also working at one of the best Design Studios in India. Alongside a Bachelors in Product Design and currently pursuing Masters of design as well. He appreciates working in teams especially with people having diverse set of knowledge and skills.

Prarthan is a collaborator who loves design thinking, research and progressive concepts with quick prototyping. While being a designer by profession, he has also tested and worked for the domains of project management and strategy, facilitating effective communication skills as well as virtual workflow (essential in this unprecedented times) while learning more in hopes to someday have his own team around the world solving impactful problems.



### **Kanika Shah – UX Researcher**

Kanika is a human-centred designer who is deeply passionate about using her design thinking skills to achieve human desirability, technical feasibility and business viability. Most recently, Kanika is working as a design researcher where she focuses on intersecting design and technology with human-centred design principles to improve people's everyday experiences. She has worked across both, government and private organisations to enhance people's user-experience and access towards justice and education. As an alumnus of the Challenge Based Innovation Program with Design Factory Melbourne, she integrated science, design and technology to focus on a solution that combat's the United Nations' Sustainable Development Goals 6 & 14. Kanika has a hunger for curiosity and she loves to expand her knowledge on topics around social innovation, history of First Nations People and co-design.



### **Ricardo Costa - Electrical Engineer and Disruptive Strategist**

Ricardo is passionate about innovation and creating new value. He has worked with financial and strategic management, event planning, and corporate education of leadership and Agile management. In Brazil, Ricardo worked in different roles within the Junior Enterprise Movement where he had a chance to organise the Brazilian Junior Enterprise National Conference in 2018, the biggest youth entrepreneurship event in the world. After graduating in Electrical Engineering and being certified in Disruptive Strategy by Harvard Business School Online, he came to Australia to learn as much as possible as a student of the Master of Entrepreneurship and Innovation program at Swinburne University of Technology. In Australia, Ricardo worked as a business developer and took part in a global open innovation project organised by the SUGAR Network for Design Innovation in which he used Design Thinking in collaborative product development processes.



### **Pip Wheaton - Design & Innovation Consultant**

Pip is a passionate creative who is fascinated by applying design thinking and a human centred approach to unconventional projects and industries. Working in a start-up as a Consultant for the last 18 months Pip applied her love of problem solving and human centred design to the data world. In this environment Pip's unique facilitation and workshoping skills enabled collaboration between the technical builders and end-users of software products. In this role she also worked on a project with Amazon's Cloud Innovation Centre based at Swinburne.

In the past Pip has also worked passionately on Design Sprints using the Google Ventures approach. Pip has most recently been working for the Metro Tunnel implementing a Digital Command Centre, bringing to life organisational data in a tangible way. Pip has worked with Design Factory Melbourne alongside both her work as a Consultant and studies in Entrepreneurship and Innovation at Swinburne. She also double-majors in UX Design and has found a spot between the design and business world to continue working in both sectors.



### **Orin Giesbers - Industrial Designer**

Orin Giesbers is an industrial designer and has spent the last 18 months working in Planet Innovations Design team creating solutions focused predominantly on the biomedical field. He is passionate about working with stakeholders to design user-centred solutions while remaining aesthetically pleasing, functionally effective and intuitive. Through Orin's experience at Planet Innovation, he has worked with local, and International clients on multiple projects utilising and stretching his abilities to empathise with the user in both hardware solutions, and UX/UI solutions. When not designing or making, Orin is doing something sport-related, or exploring in search of great people and high places with great views.



### **Ben Wood - Industrial Design Honors Student**

Ben is an Industrial Design Honors Student with a fierce drive to create a better future through design. His main skill set lies in creative design and the fuzzy front end of innovation. Previously Interning at General Motors Design as a Colour & Trim designer, creating colours for their global library, trend forecasting, developing material palettes and decor, and awarded by Holden for redeveloping a waste management system for the studio that acted as a pilot for the North American studio in Detroit. Previously a student mentor at Swinburne as he believes designing a better future will be done together. When Ben is not full of ideas designing, he is out in the outdoors, reconnecting with nature and probably surfing.



### **Tiffany Reasbeck - Design Researcher**

Tiffany is a Design Researcher with expertise in Human-Centred Design, Design Thinking, Service Design, and Systems Thinking. Her research interests include (Beyond)Human-Centred Design, More-Than-Human Futures, Human-Nature Relations, Design for Sustainability Transitions, and Strategic Foresight. Tiffany has a Bachelor of Design, specialising in Industrial Design (OCAD University), a Bachelor of Fine Arts (Western University), and a Master of Design (Swinburne University). During her time at Swinburne, Tiffany participated in a range of Design Factory Melbourne units and multidisciplinary collaborations such as: The Design Factory Global Network 3-day Rat Relay Design Thinking Hackathon, 'Make It. Break' Design Sprint, Swinburne Innovation Week's Problem Framing & Ideation workshops, and DFM collaboration with Tikkun Olam Makers (TOM) Melbourne, a co-design project aimed at developing assistive products for people living with disabilities. Other design activities Tiffany has participated in include OpenIDEO's Bridgebuilder 2019 Human-Centred Design Challenge and Futures Workshop 'Cosmopolitical Relations & More-Than-Human Design Ethnography' 2019. Tiffany hopes to encourage students to learn about the value of Design Thinking as a creative problem-solving tool.



### **Katrina Van De Ven - Govt And International Affairs Advisor**

Katrina is a passionate public and foreign policy professional with over eight years' experience in policy analysis, communications and stakeholder engagement. Katrina has built her public and foreign policy experience in a variety of settings, including the Australian Mission to the United Nations in New York, United States Congress, NSW Department of Premier and Cabinet, and Queensland Parliament.

For nearly five years she has served as Chief Operations Officer of Young Australians in International Affairs, a think tank which focuses upon developing the next generation of high calibre leaders to navigate Australia's place in the Indo-Pacific century. She has also held leadership roles with the United Nations Association of Australia and Women in Nuclear.

She is currently a Government and International Affairs Advisor in ANSTO's COO Group, where she works to guide the organisation's interactions with the Australian and foreign governments



### **Dr Mitra Safavi-Naeini - Senior Physicist and Research Lead**

Dr Mitra Safavi-Naeini is a Senior Physicist and Research Lead in Human Health at ANSTO. 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 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.

Her accolades in hackathons include winning the ACS “Flatten The Curve” Hackathon (2020), ANZDF #Shockproof Hackathon (2020) and Best in Technology for NASA Space Apps COVID-19 Hackathon (2020).