

# FALLING WALLS

## LAB

# AUSTRALIA

18 SEPTEMBER 2023  
THE SHINE DOME, CANBERRA



Australian  
Academy of  
Science

## CONCEPT

The Falling Walls Foundation founded the Falling Walls Lab in 2011 to:

- ... connect aspiring innovators
- ... discover and develop talents
- ... support interdisciplinary dialogue and international cooperation
- ... develop new ways of scientific communication
- ... build new and strong networks

## TIMELINE

- 2.00pm      **Welcome by Professor Hans Bachor AM FAA**  
Master of Ceremonies, FWL Australia 2023
- 2.05pm      **Introductory remarks by Professor Chennupati Jagadish AC PresAA**  
FREng FTSE  
President, Australian Academy of Science
- 2.10pm      **Opening remarks by Sigrid Sommer**  
Chargé d’Affaires of the Federal Republic of Germany to Canberra
- 2.15pm      **Pitches (1-10)**
- 3.30pm      **Networking break and afternoon tea, jury deliberation**
- 4.05pm      **Address from Professor Frances Separovic AO FAA**  
Foreign Secretary, Australian Academy of Science
- 4.10pm      **Address from event partners**  
Representatives from EURAXESS ANZ and ZEISS
- 4.15pm      **Awards ceremony**
- 4.30pm      **Cocktail reception**
- 5.30pm      **Event ends**

\*all times are AEST

## WELCOME MESSAGE

The Australian Academy of Science, in partnership with the Embassy of the Federal Republic of Germany in Canberra, EURAXESS Australia and New Zealand, DAAD, the German Academic Exchange Service and ZEISS, is pleased to host the eighth Falling Walls Lab Australia.

Falling Walls Lab Australia provides 10 emerging researchers, academics, entrepreneurs, and professionals in Australia a platform to present their research, business model, innovative project, social initiatives, or ideas to a distinguished jury and audience from government, academia and business. Those presenting at this event were selected by the Falling Walls Lab Sydney, organised by EURAXESS and DAAD, the Falling Walls Lab Brisbane, organised by The University of Queensland, and the Falling Walls Lab Adelaide, organised by The University of Adelaide.

This is one of 79 Falling Walls Labs taking place globally throughout the year. Many of this year's 100 winners from around the world, including three from Australia, will travel to Berlin to participate in the [Falling Walls Lab Finale](#) on 7 November. On the anniversary of the fall of the Berlin Wall, these young researchers will propose solutions to the greatest challenges of our time, contributing towards a better world.

In Berlin, one presenter will be selected as the winner in the Emerging Talents category for the next generation of outstanding innovators. They will present alongside nine other luminaries on the grand stage in front of a distinguished audience of industry leaders, decision-makers, investors, and international media representatives.

We would like to acknowledge our partners who continue to make this event possible. Events such as this one can only happen with their generous support. We are also grateful to the eminent members of the jury for giving their time to select the winners of today's event. We thank everyone in the audience for their support of this event and wish the participants great success with their presentations today.

The Australian Academy of Science and event partners look forward to continuing to work together to ensure that Falling Walls Labs Australia offers this unique opportunity to young researchers and innovators in future years, helping ensure the continuation of excellent and innovative scientific research in Australia.



Professor Chennupati Jagadish AC PresAA FEng FTSE  
President, Australian Academy of Science

## JURY



**Professor Chennupati Jagadish AC PresAA FEng FTSE**  
**President**  
**Australian Academy of Science**

Professor Jagadish is a Distinguished Professor and Head of Semiconductor Optoelectronics and Nanotechnology Group in the Research School of Physics, Australian National University. He has published widely in semiconductor physics, materials science, optoelectronics and nanotechnology. Professor Jagadish is the Editor-in-Chief of Applied Physics Reviews, editor of two book series and serves on editorial boards of 19 other journals. He is a fellow of 11 science and engineering academies in Australia, the US, Europe, and India, and 14 professional societies. He has received many international awards, including a UNESCO medal for his contributions to the development of nanoscience and nanotechnologies, and has been an Australian Research Council (ARC) Federation Fellow and an ARC Laureate Fellow.



**Professor Lyn Beazley AO FAA**  
**Secretary Education & Public Awareness**  
**Australian Academy of Science**

Lyn Beazley is a distinguished neuroscientist and 2015 West Australian of the Year who has made a major contribution to the promotion and direction of science in Australia. As Chief Scientist for Western Australia (the first female to hold such a state role nationally) she championed gender diversity and science in the classroom through programs such as Microscopes in Schools, in addition to shaping science policy. Lyn is also well known for promoting science and technology in the media and she played a key role in bringing the internationally successful FameLab science communication competition to Australia.



**Dr Charles Featherstone**  
**Kearney Australia**

Dr Featherstone studied mechanical engineering at The Australian National University in computational methods applied in a commercial manufacturing context. His post-doc focused on how innovation happens and how organisations and governments can enhance innovation. His PhD in systems engineering investigated the use of complex systems modelling and uncertainty analysis to inform decision making with governments and charities. Charles also has experience as a consultant in the UK and as a senior leader with the UK Cabinet Office managing the response to the COVID pandemic.



**Julia Kaute**  
**Head of Science and Innovation**  
**German Embassy in Australia**

Julia Kaute is the Head of Science and Innovation at the German Embassy in Australia. Julia has been seconded from the Federal Ministry of Education and Research (BMBF) where she worked in the field of EU Science and Innovation. Prior to this role, Julia spent seven years at the Australian Embassy in Berlin in the field of Public Advocacy. Her previous work experience includes the Council of the European Union in Brussels, and the Federal Foreign Office in Berlin and New York City, USA. Julia holds degrees in European Studies (M.A. Hanover University) as well as English and American Studies and Scandinavian Studies (B.A. Greifswald University).



**A/Prof Angela Laird**  
**Co-Deputy Chair EMCR Forum Executive and**  
**Macquarie University**

A/Prof Angela Laird completed a PhD in Neuroscience, for her studies of spinal cord injury at UNSW, Sydney in 2008. She then went on to undertake a postdoctoral position at KU Leuven in Belgium, using zebrafish to study motor neuron disease.

Today, Angela leads the Neurodegeneration Treatment Team within the Centre for Motor Neuron Disease Research, at Macquarie University. In addition to her research, Angela is currently the Co-Deputy Chair of the Australian Academy of Science's Early and Mid-Career Researcher (EMCR) Forum Executive Committee. Within that role she works to ensure that EMCR viewpoints are considered in funding and award guidelines, policy changes and research opportunities.



**Professor Dr Michael Schuetz**  
**Director**  
**Jamieson Trauma Institute**

Professor Michael Schuetz is a practicing orthopaedic surgeon and research leader in the field of trauma care and orthopaedic trauma research.

In August 2018, Professor Schuetz commenced as the Director of the Jamieson Trauma Institute based at the Royal Brisbane and Women's Hospital campus in Brisbane, and Chair of Trauma at the Queensland University of Technology. The Jamieson Trauma Institute strives to advance the optimal trauma patient's outcome by focusing on the patient's journey to include the prehospital, acute care, rehabilitation and long-term outcomes for people

who suffer a traumatic injury. Improvements can range from models of care to specific interventions and developing new devices.

Professor Schuetz is actively involved in global clinical knowledge translation and commercialisation of novel orthopaedic surgery technologies.



**Andrew Woodland**

**Director**

**Global Business Solutions, Vision Care Group,  
ZEISS**

During the last 10 years, Andrew has been overseeing the development and implementation of new products and business solutions for a diverse range of international customers.

Prior to this, he was Director of Strategy, Global Manufacturing at ZEISS, focussing on internal operations development and integration.

Andrew started his career as a test and measurement physicist in consumer products, but realised his key interests and skills lay in putting organisation around ideas and from there, developing logical directions for selection and implementation.



## PRESENTERS



### **BREAKING THE WALL OF cancer therapy**

**Dr Emma - Anne Karlsen, The University of Queensland  
Frazer Institute**

@EmmaKarlsen10

Dr Emma-Anne Karlsen is a General Surgery Registrar and PhD Candidate at the University of Queensland's Frazer Institute where she is investigating novel breast cancer biomarkers and therapeutic strategies. She hopes to build a career as a Surgeon-Scientist to improve global health outcomes for women with breast cancer.



### **BREAKING THE WALL OF cheap green electricity**

**Sahand Karimi-Arpanahi, The University of Adelaide**

@SahandKarimi9

Sahand is a PhD candidate at the University of Adelaide and CSIRO Energy, and a Power System Engineer at the Australian Energy Market Operator. He received his bachelor's and master's degrees in electrical engineering from Sharif University and, since 2017, has been doing research in power systems and electricity markets. His current research primarily focuses on battery planning and operational optimisation, aiming to improve the profitability of solar and wind farms.



### **BREAKING THE WALL OF paediatric brain stimulation**

**Alex Griffin, The Cerebral Palsy Alliance and the  
University of Sydney**

@alexgriffin

Alex is a physiotherapist, early-career researcher and consumer of paediatric disability services. Her mission is to advance the development and application of new treatments for paediatric disability, in partnership with people with lived experience. In her current position as a postdoctoral research fellow at Cerebral Palsy Alliance and The University of Sydney, she brings subject matter expertise, leadership and lived experience to the development of clinical trials investigating novel interventions for the treatment of cerebral palsy. Alex is passionate about establishing novel interventions with the potential to create profound positive change for individuals, families and communities.



**THE WALL OF paediatric brain stimulation**

**Sera Susan Jacob, QAAFI, The University of Queensland**

@SeraSusanJacob1

Sera is a final year Ph.D. candidate with the Centre for Nutrition and Food Sciences at QAAFI and the ARC Centre for Uniquely Australian Food. She is a Food Scientist with a master's in food science and nutrition from Lund University, Sweden. She has experience in food compliance, novel processing technologies, and product development. Her passion lies in using science and ancestral wisdom to uncover the stories of what we eat and why.



**BREAKING THE WALL OF pressure injuries**

**Andrew Mencil, The University of Adelaide**

As a Physiotherapist and Team Leader, I am dedicated to enhancing health outcomes for both patients and healthcare professionals within the industry. Bridging my clinical experience with entrepreneurship, I completed an MBA from the University of Adelaide in 2023. During my MBA program, I developed a profound interest in MedTech innovation to advance patient care through cutting-edge technology.



**BREAKING THE WALL OF dust at work**

**Dr Paris Papagianas, Monash University**

@DrParisCP

Dr Paris Papagianis is a Postdoctoral Research Fellow in the Respiratory Pharmacology Lab within the Biomedicine Discovery Institute, Monash University. Paris' research focus is on lung health and disease spanning early life to adulthood. Paris' research is motivated by the critical importance of lung health over the lifespan - the lungs are where life begins and where it fails at end of life.



**BREAKING THE WALL OF inequitable education**

**Hemanshi Galaiya, The University of Queensland**

Hemanshi is a PhD student at the Australian Institute for Bioengineering and Nanotechnology at the University of Queensland. Her research is focused on utilising bacteria to sequester industrial waste gases into useful products. Over the last decade, Hemanshi has showcased a tremendous passion for increasing the quality of education especially as a champion for youth and women empowerment.





**BREAKING THE WALL OF preventable diseases**

**Peter Elango, RMIT University**

*@PeterElango*

Peter is a scientist and an engineer with interdisciplinary expertise in nano-biotechnology, advanced materials, and biomedical engineering. He is currently developing next-generation sensors for environmental and healthcare applications, particularly for screening, ambulatory care, and point-of-care (PoC) diagnostics. Peter is passionate about

MedTech- taking fundamental research from the materials and molecular level to prototyping them towards translational research.



**BREAKING THE WALL OF industrial lubricant pollution**

**Yulong Sun, The University of New South Wales**

*@yulong\_sun*

Yulong Sun, a young chemist stationed at UNSW Sydney, has garnered recognition for his seminal research on hydration lubrication systems. A pioneering force in environmental conservation, Yulong is spearheading innovative strategies to mitigate the adverse effects of industrial lubricant pollution. Backed by a robust background in organic chemistry and

mechanical engineering, he fervently advocates for the adoption of greener and more sustainable industrial processes.



**THE WALL OF preventable hospital error**

**Ellie Treloar, The University of Adelaide**

Ellie is currently a PhD Candidate examining the impact of human error in the hospital setting. She has recently received over \$180,000 in competitive funding to support her translational health research projects. She is passionate about improving patient outcomes using simple and affordable interventions that can easily be implemented in any hospital.

## PARTNERS



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of the Federal Republic of Germany  
Canberra



Seeing beyond



Deutscher Akademischer Austauschdienst  
German Academic Exchange Service