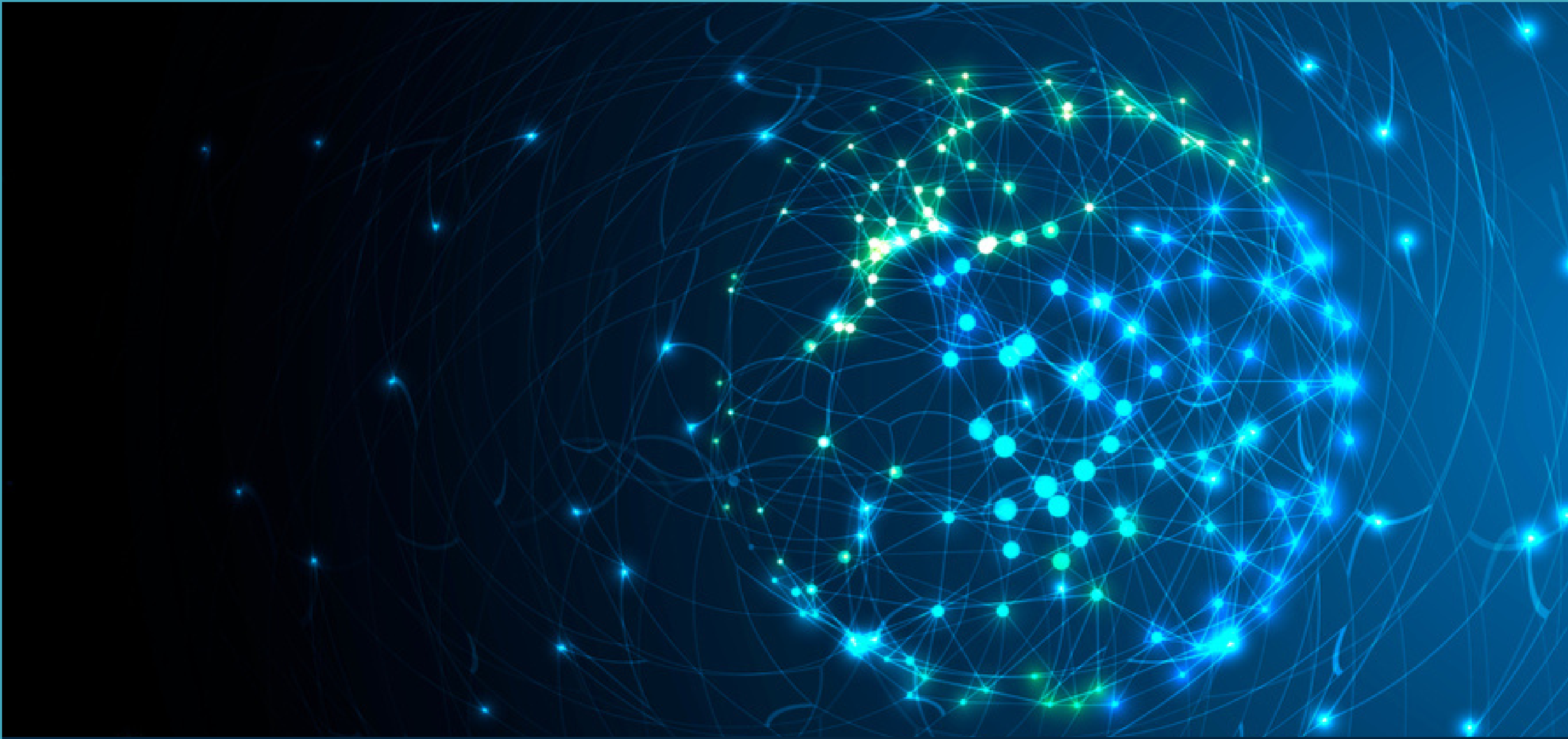




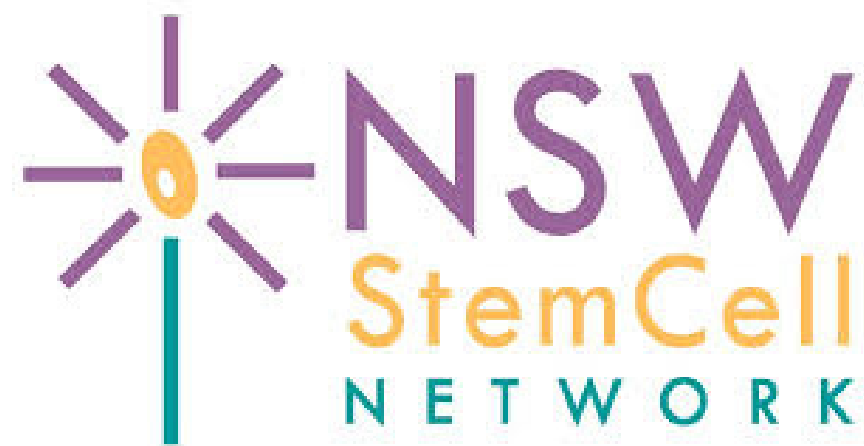
The NSW Stem Cell Network Presents

# ARTIFICIAL INTELLIGENCE AND REGENERATIVE MEDICINE



**Monday, 29 November 12:00 PM AEST**

**[www.stemcellnetwork.org.au](http://www.stemcellnetwork.org.au)**



The NSW Stem Cell Network is a professional community with an interest in the potential of stem cells to improve the human condition. Stem cell therapies underpin regenerative medicine-based technologies.

The Network brings together the scientific, health and medical research communities, the higher education sector and business with the goal of promoting growth and innovation to achieve positive health outcomes for the people of NSW and globally. Our work encompasses science, medicine, ethics, law, business and public awareness of stem cells and regenerative medicine.

Since its establishment in 2002, the Network has pursued its goals, successfully conducting regular workshops, seminars, conferences and courses that allow the knowledge sharing and professional skills development as well as embarking on collaborative research and commercial initiatives.

The NSW Stem Cell Network has received infrastructure support from Diabetes NSW.

For more info, [www.stemcellnetwork.org.au](http://www.stemcellnetwork.org.au)



# WEBINAR PROGRAM

**12:00pm - 12:10pm | Welcome by Prof Bernie Tuch**

**12:10pm - 12:30pm | Dr Jiao Jiao Li**

"Advancing new frontiers in regenerative medicine: Applications of artificial intelligence"

**12:30pm - 12:50pm | A/Prof Peter Illingworth**

"Artificial intelligence to promote embryo development for in vitro fertilisation"

**12:50pm - 1:10pm | A/Prof Lezanne Ooi**

"A machine learning pipeline for assessing neuronal function in stem cell disease models"

**1:10pm - 1:30pm | Dr Daniel Paull**

"Incorporating machine learning into high-throughput, automated, stem cell research"

**1:30pm - 1:50pm | Q&A**



**SPEAKERS**

## SPEAKER BIO: DR JIAO JIAO LI

Lecturer, NHMRC Early Career Fellow, & Co-Deputy Director on the ARC Training Centre for Innovative Engineering



ADVANCING NEW FRONTIERS IN  
REGENERATIVE MEDICINE:  
APPLICATIONS OF ARTIFICIAL  
INTELLIGENCE

Dr Jiao Jiao Li is a biomedical engineer working at the interface of engineering and biology. Her work in regenerative medicine focuses on developing 'personalised' therapies for chronic bone and joint disorders, using a combination of stem cell-based therapeutics and bioactive materials. Recently, she has been looking into adapting stem cell-derived extracellular vesicles as a new treatment for osteoarthritis, and customising them through artificial intelligence. In this talk, she will introduce her work and highlight the possible applications of artificial intelligence in regenerative medicine.

Jiao Jiao is currently a Lecturer and NHMRC Early Career Fellow at the School of Biomedical Engineering, University of Technology Sydney. She is also an Honorary Associate at the University of Sydney. She is Co-Deputy Director and a chief investigator on the ARC Training Centre for Innovative BioEngineering. Her work has been recognised by career awards from national societies (MBSANZ, AWTRS), as well as >20 publication and presentation awards. She is a current finalist for the Research Australia Discovery Award 2021.

Jiao Jiao is passionate about science communication and advocating for diversity in STEM, as a Science & Technology Australia 2021-22 Superstar of STEM and the recent winner of Falling Walls Lab Australia 2021.

# SPEAKER BIO: A/PROF PETER ILLINGWORTH

Medical Director, IVFAustralia



ARTIFICIAL INTELLIGENCE TO  
PROMOTE EMBRYO DEVELOPMENT  
FOR IN VITRO FERTILISATION

Peter is an experienced infertility specialist with over 20 years' experience in assisted reproduction. He is highly regarded internationally due to his academic achievements and practical patient focused approach.

He started his medical training in the UK, receiving his Bachelor of Medicine and Surgery and achieving his Doctorate of Medicine with honours at Dundee, Scotland. Having completed his obstetric and gynaecology training, he worked as a medical research scientist at the UK Medical Research Council Reproductive Science Unit in Edinburgh.

Moving to Australia in early 1996, Peter subspecialised in reproductive endocrinology and worked for ten years at Westmead Hospital in Western Sydney. Nowadays, he is Medical Director of IVFAustralia. His qualifications include an accredited sub-speciality in infertility and he is a Fellow of both the Royal Australian and New Zealand College of Obstetricians and Gynaecologists, and the Royal College of Obstetricians and Gynaecologists in London. Peter is a Royal College examiner in the Certificate of Reproductive Endocrinology and Infertility.

He has an international reputation in the field of reproductive medicine, and has published over 70 research papers and book chapters, and provides regular media comment in Australia. His special interests are in reproductive endocrinology and female fertility disorders and he has served on a number of senior committees of the Australian National Health and Medical Research Council. Peter takes great pride in the fact IVFAustralia is a RANZCOG appointed training ground for fertility specialists of the future.

## **SPEAKER BIO: A/PROF LEZANNE OOI**

Group Leader, Neurodevelopment and Neurodegeneration Laboratory, University of Wollongong



**A MACHINE LEARNING PIPELINE FOR ASSESSING NEURONAL FUNCTION IN STEM CELL DISEASE MODELS**

Associate Professor Lezanne Ooi is a Principal Research Fellow and Group Leader of the Neurodevelopment and Neurodegeneration Lab at the University of Wollongong, Australia. She is an NHMRC Boosting Dementia Research Leadership Fellow. Her research speciality is cellular neuroscience and the regulation of neuronal function in neurodegenerative disease. Her lab has generated >100 induced pluripotent stem cell lines for disease modelling and drug discovery for Alzheimer's disease, motor neurone disease and vanishing white matter disease and uses electrophysiology, imaging and a range of cell and molecular biology techniques.

## SPEAKER BIO: DR DANIEL PAULL

Senior Vice President, Discovery and Platform Development, NYSCF Research Institute, USA



INCORPORATING MACHINE  
LEARNING INTO HIGH-THROUGHPUT,  
AUTOMATED, STEM CELL RESEARCH

Dr Daniel Paull is Senior Vice President, Discovery and Platform Development at the NYSCF Research Institute. Daniel oversees the NYSCF Global Stem Cell Array, an automated platform for large scale derivation, genome editing and differentiation of human induced pluripotent stem cells®. Combining biology, software and hardware engineering, this platform has generated thousands of stem cell lines both within collaborations and as a community resource through the NYSCF Cell Line Repository.

He is currently leading efforts to develop novel approaches for detecting disease signatures and identifying therapeutic candidates to treat a range of diseases including Parkinson's, MS and rare diseases.

Prior to joining this platform, while based in the lab of Professor Dieter Egli, he led the development of a novel technique to prevent the inheritance of mitochondria disease using IVF-type approaches. Daniel was also heavily involved in developing techniques to derive human cell lines using somatic cell nuclear transfer and develop models of diabetes using iPSCs.

Daniel obtained his PhD from University College London.



**LIST OF  
REGISTRANTS**

## Name, Institution

Ismael Aguirre-Maclennan, Children's Medical Research Institute  
Hamid Alinejad Rokny, University of New South Wales  
Esteban Avendano, University of Rochester  
Nadia Badawi, The Children's Hospital at Westmead Asawari Bapat, Infohealth FZE  
Anuja Bony, Illawarra Health & Medical Research Institute  
Tonya Brody, NeuroSynergy  
Brikenë Bublaku, N/A  
Maureen Chan, Scientifix Pty Ltd  
Amy Chapman, The University of Auckland  
Girinivasan Chellamuthu, Orthopaedic Research Group  
Jeremy Crook, Chris O'Brien Lifehouse  
Rakesh Dey, Pandorum Technologies Pvt. Ltd.  
Dzung Do-Ha, University of Wollongong  
Emma Ebinger, Adora Fertility  
Ngaire Elwood, BMDI Cord Blood Bank  
Maryam Fayazi, Kessler Foundation  
Paul Fennessy, Department of Health  
Aya Fujii, Austrade  
Eve Glage, Number 1 Fertility  
Hannah Glover, Columbia University  
Daniella Goldberg, Gene Genie Productions  
Anai Gonzalez Cordero, Children's Medical Research Institute  
Crystal Goundar, Number 1 Fertility  
Anna Guller, Macquarie University  
Jenna Hall, University of Melbourne  
Maddy Hardy, The University of Sydney  
Daniela Iacobelli, Number 1 Fertility  
Mahdi Imani, Australian Institute for Musculoskeletal Science  
Reuben Jacob, Bellberry Limited  
Nigel Kee, Karolinska Institutet  
Kilian Kelly, Cynata Therapeutics Limited  
Maira Kentwell, Department of Health  
Ilya Klabukov, National Medical Research Radiological Center  
Joanna Knott, SpinalCure Australia  
Isabella Lambert-Smith, University of Wollongong  
Jack Lambshead, Biointelect Pty Ltd  
Ricky Lau, Monash University  
Daniel Lemberg, Sydney Children's Hospital  
Grace Lidgerwood, University of Melbourne  
Michael Lovelace, St. Vincent's Centre for Applied Medical Research  
Ian Lucas, SeerPharma Pty Ltd  
Sara M., University of Wollongong  
Max MacDonald, University of Aberdeen  
Simon Maksour, Illawarra Health & Medical Research Institute  
Hany Marei, Mansoura University  
Alfredo Martinez-Coll, University of Technology, Sydney  
Natalie Matosin, University of Wollongong  
Majid Mehravar, Monash University  
Dalia Mizikovsky, University of Queensland  
Deniz Morali, Biointelect Pty Ltd  
Michael Morris, The University of Sydney  
Caroline Mosessian, Vitro Biopharma Inc.  
Megan Munsie, University of Melbourne  
Sathish Muthu, Orthopaedic Research Group  
Cyndy Nauer STEMCELL Technologies  
Neville Ng, Illawarra Health & Medical Research Institute  
Ana Nunez, Monash University  
Michael O'Connor, Western Sydney University  
Hwee Ong, STEMCELL Technologies  
Huan Ting Ong, Ear Science Institute Australia  
Nathan Palpant, University of Queensland  
Vishal Parit, Krishna Institute of Medical Sciences

## Name, Institution

Madison Paton, Cerebral Palsy Alliance Research Institute  
Francis Peddie, N/A  
Thanushi Peiris, MCRI  
Esha Pillay, Pall Corporation  
Lovelie Poh, Baker HDI  
Shalini Rajakaruna, Number 1 Fertility  
Umali Raskar, TerumoBCT  
Sharon Ricardo, Monash University  
Victor Roy, Cellgen Medical  
Dianne Ruka, Monash University  
Airi Sakaguchi, Austrade  
Shreya Saraf, Prescient Healthcare Group, India  
Rika Sasaki, Austrade  
Margret Schuller, Profitable Business Development  
Adnan Shafiq, La Trobe University  
Camille Shanahan, Biointelect  
Rachel Shparberg, NSW Stem Cell Network  
Shanti Sibuea, Monash Institute of Pharmaceutical Science  
Robert Simons, Jointmedicine  
Robbie Singh, N/A  
Kameshwar Singh, N/A  
Reena Singh, The University of Sydney  
Mitchell St Clair-Glover, Illawarra Health & Medical Research Institute  
Lincon Stamp, University of Melbourne  
Carolyn Sue, Kolling Institute, Royal North Shore Hospital  
Mostafa Tarique, Bangabandhu Medical University  
Chih Wei Teng, CCRM Australia  
Silvio Tiziani, Australian Regenerative Medicine Institute  
Lay Too, The University of Sydney  
Tamara Treleaven, AIVF  
Nikki Tsoudis, Scientifix Pty Ltd  
Bernie Tuch, NSW Stem Cell Network  
Russell Vickers, Clinicalstemcells.com  
Susan Vollmer, Emmes  
Sally Vuong, The University of Sydney  
Meredith Ward, Royal Hospital for Women  
Keren Weiss, NSW Stem Cell Network  
Louise White, SeerPharma Pty Ltd  
Craig Wright, Royal Prince Alfred Hospital  
Jonathan Yeh, Saisei Ventures