



NOVEL TECHNOLOGIES IN CHILDHOOD CANCER SYMPOSIUM

Friday 27th October 2023

8.30 am - 5.30 pm

NSW Teachers Federation Conference Centre, 37 Reservoir St, Surry Hills

Program Chairs: Dr Marion Mateos and Dr Smadar Kahana-Edwin

Please register using Eventbrite link below:

[KCAsymposium2023 Novel technologies in childhood cancer registration link](https://www.eventbrite.com/e/kc-asymposium-2023-novel-technologies-in-childhood-cancer-registration-link)

8:50-9:00 Symposium Opening and Acknowledgement of Country	
PROGRAM	<p>Session 1 Revolutionising Paediatric Oncology: Data-Driven and Patient-Centric Approaches Chair: A/Prof Leonard Goldstein - Garvan Institute of Medical research</p>
	<p>9.00-9.30</p> <p>A/Prof Fatemeh Vafae - School of Biotechnology and Biomolecular Sciences, University of New South Wales, Randwick, NSW</p> <p>AI-Enabled Medical Technologies: From Diagnostics to Therapeutics</p> <p>A/Prof Fatemeh Vafae is the Deputy Director of UNSW Data Science Hub since 2021 and an A/Prof in Computational Biomedicine and Bioinformatics at the School of BABS. A/Prof Vafae has launched and leads the AI-enhanced Biomedicine Laboratory at UNSW, collaboratively working on deploying advanced AI techniques to address various pressing biomedical problems.</p>
	<p>9.30-10:00</p> <p>Prof Leonard Sender - Children's hospital of Orange County (CHOC), University of Irvine California, California, USA</p> <p>TBC</p> <p>Prof Leonard Sender is an AYA (Adolescents and Young Adults) clinician at Children's Hospital of Orange County (CHOC) and University of Irvine California. Prof Sender is regarded as one of the leading advocacy pioneers of the AYA oncology movement. Prof Sender developed the joint AYA Cancer Program at CHOC Children's and UC Irvine Health and is currently the chairman of the United States' largest AYA patient advocacy group: Stupid Cancer (www.stupidcancer.org).</p>
	<p>10:00-10:25</p> <p>Dr Claire Sun - Hudson Institute of Medical Research, Monash University, Melbourne, VIC</p> <p>Exploring New Therapeutic Avenues for Paediatric Cancers through Data-Driven Strategies</p> <p>Dr Claire Sun is an early career researcher and an emerging research leader in computational biology in cancer research. Dr Sun is the current recipient of a Victorian Cancer Agency Early- Career Fellowship. Since 2018, she has served as the lead bioinformatician in the Next-Generation Precision Medicine Program at the Hudson Institute of Medical Research.</p>
	<p>10:25-10:45</p> <p>PhD student finalists</p> <ol style="list-style-type: none"> 1) Safaa Al Haj Hussein - More than just single nucleotide alterations: delving into the genome of paediatric cancer predisposition 2) Elisha Hayden - PLK1 inhibition uncovers a potent therapeutic vulnerability in H3K27M gliomas by modifying ribosomal pathways 3) Aqsa Mazhar - Identification and development of inhibitors to target <i>Aly/REF</i> oncogenic protein in <i>MYCN</i>-driven neuroblastoma 4) John-Paul Ong - Uncovering the druggable proteome of aggressive childhood cancers for target-based drug discovery 5) Daenikka Ravindrarajah - Identifying synthetic lethality using CRISPR to develop novel combination therapies for high-risk Ewing's sarcoma

10:45-11:10

MORNING TEA

Session 2 Innovations in Drug Discovery and Therapeutic Delivery Systems

Chair: Dr Dianne Sylvester – Sydney Childrens Hospital Network, Westmead and ZERO Childhood Cancer Program

11.10-11.35

Prof John Silke - Walter and Eliza Hall Institute of Medical Research, Melbourne, VIC**Targeted Protein Degraders: New Medicines for Cancer and New Tools for Cancer Biology**

Professor John Silke is a Laboratory Head for Infection, Inflammation and Immunity Theme at Walter and Eliza Hall Institute of Medical Research. His lab investigates proteins that can regulate both inflammation and cell death. His lab is revealing how these proteins contribute to inflammatory diseases including: psoriasis, rheumatoid arthritis, Crohn's disease, as well as cancer. His goal is to translate discoveries into new treatments for these scourges.

11:35-12:00

Dr. Antoine de Weck - Children's Cancer Institute Australia, University of New South Wales, Randwick, NSW**High-throughput Perturbation for Target Identification and Drug Discovery**

Associate Professor Antoine de Weck joined Children's Cancer Institute in January 2022 to establish and lead the Computational Drug Discovery Biology Group. Antoine's work focuses on identifying new therapeutic vulnerabilities in childhood cancers and identifying new or existing compounds capable of targeting those vulnerabilities.

12.00-12:35

Dr. Joe Kreitz - Massachusetts institute of Technology, McGovern Institute for Brain Research, Cambridge, MA, USA**Programmable Therapeutic Delivery with a Bacterial Nano-Syringe**

Joe Kreitz works in the Feng Zhang laboratory (where CRISPR was discovered) at the Broad Institute of MIT and Harvard in Cambridge, Massachusetts, USA. His work focuses on a new class of targeted protein delivery tools called contractile injection systems, which he first published earlier this year in Nature. This work received broad media coverage including Nature, Science, Scientific American, GEN, Stat News, and others.

12:35-13:10

ECR finalists

- 1) **Dr. Rebecca Lehmann:** Novel therapeutic targets and treatments for drug-resistant BRAF^{V600E} paediatric high-grade glioma
- 2) **Dr. Fiona Yang:** Developing an AAV-based gene therapy for neurofibromatosis type 2
- 3) **Dr. Holly Evans:** Using behavioural theories to implement novel communication resources for healthcare professionals

13:10-13:50

LUNCH

Session 3 Cutting-Edge Technologies in Precision Medicine and Cancer Research

Chair: Dr Emmy Fleuren - Childrens Cancer Institute Australia

13:50-14:15

Prof Susan Branford - Department of Genetics and Molecular Pathology University of South Australia**RNA-Based Next-Generation Sequencing for Sensitive Detection of Various Types of Mutations**

Professor Susan Branford is the Head of the Leukaemia Unit in the Department of Genetics and Molecular Pathology at SA Pathology and a Section Leader at the Centre for Cancer Biology, University of South Australia. She is a major contributor to international collaborative initiatives that established guidelines and recommendations for producing reliable molecular data for patients with chronic myeloid leukaemia. Her research is focused on understanding the factors that predict for response to tyrosine kinase inhibitor therapy and the mechanisms of drug resistance.

14:15-14:10

Dr Arutha Kulasinghe - *Frazer Institute, University of Queensland*
From Pixels to Clinical Insights: Ultradeep immunophenotyping of the tumour microenvironment

Dr Arutha Kulasinghe is a Peter Doherty NHMRC Research Fellow and leads the 'Clinical-oMx Lab' at the University of Queensland. Dr Kulasinghe has pioneered spatial transcriptomics using digital spatial profiling approaches in the Asia-Pacific region, contributing to world-first studies for lung cancer, head and neck cancer, and COVID-19. His research aims to understand the underlying pathobiology by using an integrative multi-omics approach.

14:40-15:15

A/Prof Dayong Jin - *University of Technology Sydney, Institute for Biomedical Materials & Devices, Sydney, Australia*

Single Molecule Assays by Upconversion Nanophotonics

A/Prof Dayong Jin is a Clarivate Highly Cited Researcher, one of the world's top 0.1% influential researchers across multiple fields. He has spent the past decade driving the transformation of photonics and materials into analytical, diagnostic, and imaging devices for disease detection, including cancer. These devices use photonics technologies to analyse saliva, urine, or blood to identify early signs of disease and toxins.

15:15-15:40**AFTERNOON TEA**

Session 4 Enhancing Paediatric Cancer Research: Harnessing Novel Technologies and Strategies

Chairs: Dr. Marion Mateos – *Sydney Childrens Hospital Network, Randwick*, and Dr. Smadar Kahana-Edwin – *Sydney Childrens Hospital Network, Westmead*

15:40-16:15

A/Prof Efrat Shema-Yaacoby - *Department of Immunology and Regenerative Biology, Weizmann institute of Science*

Epigenetics of Paediatric Gliomas: Novel Technologies for Research and Diagnostics

A/Prof Efrat Shema is a Laboratory Head for Cancer Epigenetics, Department of Biological Regulation. Her research is focused on understanding human genome regulation by development and application of novel single-molecule-based technologies to visualize the epigenome. She received her BSc degree from the Hebrew University of Jerusalem and her PhD from the Weizmann Institute.

16:15-16:45

Panel discussion - "How can we fast track use of novel technologies into the clinic for childhood cancer. What are the enablers and potential pitfalls?"

Panelists: **A/Prof Paul Ekert** - CCIA, **Prof Geraldine O'Neill** - SCHN, Westmead, **Prof David Ziegler** - SCHN, Randwick, **Prof Susan Branford** -University of South Australia, **Lucy Jones** - Neuroblastoma Australia

16:45-17:00**Award Presentation and Concluding Remarks****17:00-18:00****CONFERENCE DRINKS RECEPTION**