KCA Origins of Childhood Cancer and Therapeutic Opportunities

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Invited International Speakers

Prof William Weiss, MD, PhD is Professor of Neurology, Paediatrics, and Neurosurgery at UCSF, director of Clinical Child Neurology at San Francisco General Hospital, director of Child Neurology at UCSF's Benioff Children's Hospital and co-director of the Paediatrics Malignancies Program. Dr Weiss' laboratory develops mouse models that recapitulate the biology and genetics of human neural cancers to inform biology, genetics, and therapy of human tumours. Specifically, the Weiss Lab is identifying the subsequent genetic events that promote tumorigenesis, studying cancer stem and progenitor cells to understand their biology; and evaluating new targets, therapies, and mechanistic rationales for combining targeted agents.

A/Prof Claudia Kleinman is Associate Professor of Human Genetics in the Department Human Genetics in the Faculty of Medicine at McGill University in Canada. She is also an Investigator in the Lady Davis Institute for Medical Research. She runs a large research team comprising postdoctoral researchers and several PhD students. Dr Kleinman runs a laboratory that focuses on using computational genomics to define pathological mechanisms of gene expression, in cancer and brain development. Through the computational analysis of genome-wide data, her lab tries to understand gene expression mechanisms, their interplay with genetic and epigenetic factors, and how they cause disease. Her key focus is on cancer and brain development, two areas where deregulation of gene expression plays a major role.

Invited National Speakers

Prof David Eisenstat is a paediatric neuro-oncologist and developmental biologist. From 1999-2011, David was Senior Investigator, Manitoba Institute of Cell Biology and Director, Neuro-Oncology, CancerCare Manitoba. From 2011-2020, he held the Kids with Cancer Society Chair in Pediatric Oncology; Professor and Division Director, Hematology/Oncology/Palliative Care, Department of Pediatrics (2011-2017), Co-Director, Cancer Research Institute of Northern Alberta (2014-2017); and Chair, Department of Oncology (2017-2020), University of Alberta. Since 2020, he is Director, Children's Cancer Centre, Royal Children's Hospital; Group Leader, Neuro-Oncology, Stem Cell Medicine, Murdoch Children's Research Institute. David's research focuses on the developmental origins of paediatric brain and solid tumours.

A/Prof Mandy Ballinger is Deputy Director of the UNSW Centre for Molecular Oncology, Leader of the Genetic Cancer Risk Group at the Garvan and Head of Cohorts for Omico. Her clinical training is in Genetic Counselling. She oversees a program of work focused on defining heritable cancer risk in sarcomas and other early on-set cancers. A/Prof Ballinger leads SMOC, the Australian whole body MRI study for individuals with multi-organ cancer prone syndromes. Her work in Li Fraumeni syndrome has impacted clinical practice internationally and has led to an Australian Medicare item number for whole body scans for early cancer detection. Dr Ballinger continues to use research cohorts as vehicles for intervention to impact clinical practice and improve patient outcomes.

Dr Sébastien Malinge is currently leading the `Translational Genomics in Leukaemia` team at the Telethon Kids Institute – Cancer Centre (Perth, WA). His team has developed multiple clinically relevant models (cell lines, patient-derived xenografts and immunocompetent paediatric mice) to identify new molecular biomarkers and targetable weaknesses in Blood cancer. His most recent work in childhood leukaemia has led to the discovery of key players and mechanisms in cancer predisposition, development, maintenance and response to `standard of care` therapy. His long-term goal is to develop novel, safer and biology-informed treatments for children with Blood cancer.

Prof Brandon Wainwright is Co-Director of the Children's Brain Centre at the University of Queensland. The Wainwright laboratory discovered the role of the Hedgehog signalling pathway in common human cancer, and their subsequent finding that Ptch1 was mutated in medulloblastoma identified the first gene known to cause brain cancer in either children or adults. Since that time the Wainwright laboratory has focused on understanding the genetic signalling events that initiate and sustain paediatric brain tumours, particularly in medulloblastoma. Their work has led to the identification of a number of potential new small molecule therapies including one currently in clinical trial.

Dr Joanna Achinger-Kawecka is a Group Leader of the 3D Epigenome in Cancer group at the Garvan Institute of Medical Research and Conjoint Senior Lecturer at UNSW Sydney. Joanna completed her PhD at the University of Tuebingen, Germany supported by the prestigious Marie Sklodowska-Curie Fellowship, studying epigenetic biomarkers in breast cancer. Following her PhD, she joined the Epigenetics Research laboratory of Prof Susan Clark at the Garvan Institute and established her own research group in 2023. The group's research focuses on understanding the role of 3D genome architecture in cancer, including its cell-to-cell and temporal variability. The main goal is to uncover new therapeutic targets for the treatment of metastatic disease.

Dr Melanie Eckersley-Maslin is a group leader and Snow Fellow at the Peter MacCallum Cancer Centre and research fellow in the Department of Anatomy and Physiology at the University of Melbourne, Australia. Her lab investigates epigenetic plasticity in development and cancer to explore how cell identity is established in embryos yet deregulated in cancers, with the aim to identify new therapeutic targets. Melanie completed her PhD in molecular biology at Cold Spring Harbor Laboratory's School of Biological Sciences in New York, USA with Prof David Spector before postdoctoral research in developmental epigenetics with Prof Wolf Reik at the Babraham Institute, Cambridge UK supported by an EMBO Fellowship, Marie Curie Independent Fellowship and a BBSRC Discovery Grant. In 2021, Melanie returned to Australia to establish her research lab supported by the Lorenzo and Pamela Galli Medical Trust. She is recipient of the 2020 MetCalf Prize for Stem Cell Research, a 2021 Snow Medical Research Fellowship and the 2023 Lorne Genome Millennium Prize.