



Childhood Cancer Research Symposium

- PROGRAM -
Wednesday, 12 February 2020

SYMPOSIUM OPENING

8:50 - 9:00

WELCOME AND INTRODUCTIONS

Associate Professor Ron Firestein | Hudson Institute of Medical Research

SESSION 1 | New therapeutic opportunities for osteosarcoma | Chaired by Associate Professor Ron Firestein

9:00 - 9:40

Professor E. Alejandro Sweet-Cordero | University of California, San Francisco (USA)

'Genomic analysis of osteosarcoma: insights into tumor evolution, metastasis and therapy response'

Prof Sweet-Cordero is a physician-scientist focused on cancer biology. The goal of Prof Sweet-Cordero's laboratory is to understand the molecular rewiring that occurs in cancer in order to deepen our fundamental understanding of this disease and potentially identify new therapeutic opportunities. They use functional genomics applied to mouse and human systems to understand the transcriptional networks that regulate the outcome of specific oncogenic mutations.

Prof Sweet-Cordero's lab has two primary disease interests: lung cancer and paediatric sarcomas. They have used functional genomics in mouse and human models to identify novel synthetic vulnerabilities for oncogenic KRAS (*Vicent et al, 2010, JCI and Gwinn et al 2018, Cancer Cell*) and identified and characterised the role of tumour-propagating cells and the importance of the Notch pathway in lung cancer (*Zheng et al, 2013, Cancer Cell*). Most recently, they have described a potential new therapeutic approach for lung cancer involving targeting of a cytokine produced by cancer associated fibroblasts (*Marquez et al, Nature Medicine, in press*). In their sarcoma work, they are interested in mechanisms driving osteosarcoma and Ewing sarcoma progression and therapy resistance (*Howarth et al, JCI, 2014, Sayles and Breese, Cancer Discovery, 2019*). The lab relies on computational genomic analysis, and they have extensive experience in generating next-generation sequencing datasets for gene and network discovery using both primary tumours and human and mouse model systems.

In addition to Prof Sweet-Cordero's work as a research scientist, he also directs the Molecular Oncology Initiative at UCSF, an effort to advance the clinical application of precision medicine in oncology for adult and paediatric cancer patients.



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9:40 - 10:00	<p>Dr Maya Kansara Garvan Institute of Medical Research <i>'Novel drug targets in osteosarcoma, bench to bedside'</i></p> <p>Dr Maya Kansara is the group leader of the Immunobiology of Cancer lab and the head of the Translational Oncology lab at the Garvan Institute of Medical Research based in Sydney. Her preclinical work focuses on development of mouse models of osteosarcoma and identifying new treatment options for this rare cancer type.</p>
10:00 - 10:20	<p>Dr Jason Cain Hudson Institute of Medical Research <i>'Targeting the Hedgehog Signalling Pathway in Osteosarcoma'</i></p> <p>Dr Jason Cain is Head of the Developmental and Cancer Biology research group in Hudson Institute's Centre for Cancer Research and a Chief Investigator for the Hudson Monash Paediatric Precision Medicine Program. A developmental and cancer biologist, Dr Cain is driving cutting-edge research to understand the role of critical embryonic signalling pathways and epigenetic mechanisms in normal and abnormal development and disease, including paediatric connective tissue (sarcomas), paediatric brain cancers (including atypical teratoid rhabdoid tumours, medulloblastoma and diffuse intrinsic pontine glioma), and lung cancer.</p> <p>After completing his PhD studies at Monash University in 2006, Dr Cain moved to The Hospital for Sick Children in Toronto, Canada to complete postdoctoral training with Dr Norman Rosenblum in the Program of Developmental and Stem Cell Biology. Here, he focused on the role of the Hedgehog signalling pathway in renal development and disease, developing specialised skills in developmental biology, mouse models of human disease, and congenital and paediatric disease.</p> <p>On his return to Australia in late 2010, he joined Hudson Institute of Medical Research as a Research Fellow under Professor Neil Watkins. In 2014, Dr Cain was appointed Head of the Developmental and Cancer Biology laboratory, continuing his work in developmental biology and paediatric brain and solid cancers.</p>
10:20 - 10:30	<p>Caroline Drinkwater Hudson Institute of Medical Research <i>'The Australian and New Zealand Children's Haematology/ Oncology Group (ANZCHOG) Biobanking Network'</i></p> <p>Caroline Drinkwater is the Children's Cancer Foundation Senior Biobank Specialist for the Hudson-Monash Paediatric Precision Medicine (HMPPM) Program.</p> <p>As the Children's Cancer Foundation Senior Biobank Specialist, Caroline brings technical and operational knowledge to the development of the 'Living Biobank' platform at the Hudson Institute and oversees all biobanking activities for the HMPPM Program. Additionally, Caroline is Biobank Coordinator for the Monash Children's Cancer Biobank, led by Dr Peter Downie at the Monash Children's Hospital.</p> <p>Caroline represents the Hudson Institute as a Site Coordinator for the collaborative membership with the Children's Brain Tumor Tissue Consortium (CBTTC) in Philadelphia, US. She is also an active member for the Australian and New Zealand Children's Haematology/Oncology Group (ANZCHOG) Biobanking Network, representing the Monash Children's Cancer Biobank."</p>
10:30 - 11:00	MORNING TEA

SESSION 2 | Improving outcomes for paediatric brain tumours | Chaired by Dr Peter Downie

11:00 - 11:40	<p>Dr Pratiti (Mimi) Bandopadhyay Dana-Farber Cancer Institute (USA) <i>'The genomic landscape of paediatric gliomas'</i></p> <p>Pratiti (Mimi) Bandopadhyay, MBBS, PhD, is a Paediatric Neuro-oncologist and Scientist within the Dana-Farber/Boston Children's Cancer and Blood Disorders Center, an Assistant Professor of Pediatrics at the Harvard Medical School, and an Associate member of the Broad Institute of MIT and Harvard. She leads a laboratory dedicated to paediatric brain tumours at the Dana-Farber Cancer Institute.</p> <p>Mimi was born and raised in Australia, where she completed her medical studies (Monash University), PhD (University of Melbourne), and specialty training in paediatrics and haematology/oncology (Royal Children's Hospital and Monash Medical Centre, Melbourne, and the Australasian College of Physicians), followed by further training in paediatric neuro-oncology under the mentorship of Dr David Ashley. In 2011, Mimi joined the team at the Dana-Farber/Boston Children's Cancer and Blood Disorders Center, where she completed subspecialty training in paediatric neuro-oncology under the guidance of Dr Mark Kieran, followed by post-doctoral training in Cancer Genomics at Dana-Farber Cancer Institute and the Broad Institute under the mentorship of Dr Rameen Beroukhi. The Bandopadhyay Lab applies genomic approaches to identify drivers of paediatric brain tumours, identify treatment strategies and characterise resistance mechanisms to cancer therapeutics.</p> <p>In addition to her efforts in the lab, Mimi is a member of the clinical paediatric neuro-oncology team in the Dana-Farber/Boston Children's Cancer and Blood Disorders Center, contributing to the care of children with brain tumours. These children are a constant motivation for Mimi (and all members of the Bandopadhyay Lab) to undertake translational research that is dedicated to improving the outcomes of children diagnosed with paediatric brain tumours.</p>
11:40 - 12:00	<p>Dr Raelene Endersby Telethon Kids Institute <i>'Optimising the mix of old and new: Better chemoradiotherapy combinations for medulloblastoma'</i></p> <p>Dr Raelene Endersby was awarded her PhD in 2003 from the Harry Perkins Institute for Medical Research (under the supervision of Prof Peter Klinken AC), undertook postdoctoral training in the Neurobiology and Brain Tumor Program at St Jude Children's Research Hospital, USA (under the supervision of Dr Suzanne Baker), and was awarded a Fellowship in 2011 to return to Australia to establish the Brain Tumour Research Program at the Telethon Kids Institute, which she co-leads with Dr Nick Gottardo. This collaborative group of clinicians, neurosurgeons and laboratory scientists uses a suite of <i>in vivo</i> models to understand the effects of paediatric brain tumour mutations on normal brain development and tumorigenesis. Her team also investigates potential therapeutic targets and uses <i>in vivo</i> model systems to evaluate novel treatments prior to clinical trial.</p> <p>Dr Endersby is a passionate advocate for science and actively encourages young scientists to get involved in medical research. She has mentored high school students, undergrads, Honours, Masters and PhD students in her lab. Dr Endersby has also chaired the Telethon Kids Institute Postdoctoral Council and been on the executive committee for the Australian Academy of Science Early-Mid Career Researchers Forum.</p>
12:00 - 12:10	<p>Dr Pouya Faridi Monash University <i>'Novel neopeptides in the diffuse intrinsic pontine glioma (DIPG) immunoepitome'</i></p> <p>Dr Pouya Faridi graduated from the National Organization for Development of Exceptional Talents and studied a Pharmacy Professional Doctorate and a PhD in Pharmaceutical Sciences. In 2012, he joined Professor Ruedi Aebersold Lab at ETH Zurich, Switzerland, one of the world leaders in the field of proteomics. In 2016, Pouya moved to Professor Tony Purcell's lab at the Monash Biomedicine Discovery Institute, where he has developed a new workflow for identification of a novel class of cancer antigens which are not genomically templated. The result of this research has been published in the prestigious journal of <i>Science Immunology</i>. He is passionate to do his research with hope to answer a major question: How can we use tumour specific antigens, especially spliced peptides, in cancer immunotherapy? In recent years, he has received different prizes in recognition of this discovery, such as the Australasian Proteomics Society Early Career Award and a Monash BDI Award for Outstanding Achievement in 2018.</p>

12:10 - 12:20	<p>Dr Christine White Hudson Institute of Medical Research <i>'Establishing a Molecular Profiling Service for Children's Central Nervous System Tumours in Australasia – The AIM BRAIN PROject'</i></p> <p>Dr Christine White works with A/Prof Elizabeth Algar in the Genetics and Molecular Pathology laboratory, establishing a diagnostic platform for molecular profiling of childhood brain tumours. This technology, currently only available overseas, will allow Australian and New Zealand patients to obtain a more precise diagnosis of their disease.</p> <p>Dr White completed her BSc (Hons) at the John Curtin School of Medical Research at the Australian National University. She completed her PhD at the Walter and Eliza Hall Institute of Medical Research, where she studied innate immune signalling. She then moved to Cleveland, OH, USA for postdoctoral training with Professor Bryan Williams and Dr Ganes Sen, in which she completed a variety of projects which focused on the role of Interferon signalling in development. In 2014, she began working with Dr Daniel Gough in the STAT Cancer Biology laboratory in the Centre for Cancer Research at the Hudson Institute studying the role of STAT3 in childhood brain tumours.</p>
12:20 - 12:40	<p>Prof Brandon Wainwright The University of Queensland <i>'A functional genomics screen identifies therapeutic vulnerabilities in medulloblastoma'</i></p> <p>Professor Brandon Wainwright is professor of Molecular Genetics and Director, Institute for Molecular Bioscience (IMB) at the University of Queensland. His group was the first to identify the role of hedgehog signalling in common human cancer, including medulloblastoma. Current research focuses on pathways controlling cerebellar development and cancer, as well as the identification of biomarkers that will facilitate clinical trials of new agents in paediatric brain tumours.</p>
12:40 - 1:40	LUNCH
SESSION 3 High mortality cancers: Developments and treatment strategies Chaired by Dr Jason Cain	
1:40 - 2:00	<p>Dr Sharon Low Yin Yee Neurosurgical Service, KK Women's and Children's Hospital; National Neuroscience Institute (Singapore) CANCELLED DUE TO COVID-19 TRAVEL RESTRICTIONS <i>'Overview of paediatric brain tumours in Singapore'</i></p> <p>Dr Sharon Low graduated with an MBBS from Monash University (Australia) and completed her Advanced Surgical Training (Neurosurgery) at the National Neuroscience Institute (Singapore). Her personal interest is in neuro-oncology and other CNS-related neoplasms. This led to her embarking on a research PhD at the National University of Singapore (NUS). In February 2015, she successfully defended her PhD thesis titled 'Characterizing therapeutically resistant human glioblastoma cells'. This was followed by her completion of her FRCS (Surgical Neurology) exams in September 2015.</p> <p>Dr Low continues in pursuit of research interests centred around paediatric brain tumours, in particular medulloblastomas and germ cell tumours. At present, she is the Head of Service for Neurosurgery at KK Women's and Children's Hospital, and one of the Principal Investigators of the VIVA-KKH Brain and Solid Tumours Laboratory. Her current research focuses on translational and mechanistic aspects of malignant childhood brain tumours.</p> <p>Dr Low strongly believes in a holistic approach in the management of patients afflicted by difficult brain tumours, whereby there is a need to combine good neurosurgical techniques, in-depth molecular research, and more importantly for the patients and their families, psychosocial support for better disease management.</p>

2:00 - 2:20	<p>Dr Mark Pinese Children's Cancer Institute <i>'Seeing past the numbers: using computational approaches to give insight into cancer'</i></p> <p>Dr Mark Pinese is a computational biologist with leading experience in the application of genomic technologies clinically, and at population scale. Dr Pinese was a member of the International Cancer Genome Consortium pancreatic cancer project, and helped to develop Australia's first clinically-accredited whole genome sequencing test for rare disease. More recently, Dr Pinese has led the analysis of the NSW Medical Genome Reference Bank, the largest genomic cohort assembled to date in Australia, and through the Vodafone DreamLab application has applied heterogeneous citizen computing platforms to address challenging research problems. A past member of the MoST and PRISM molecular tumour boards, Dr Pinese is currently a Senior Bioinformatics Research Officer and an NHMRC Emerging Leadership Fellow at the Children's Cancer Institute, where he works to better understand the causes of childhood cancer.</p>
2:20 - 2:30	<p>Dr Claire Sun Hudson Institute of Medical Research <i>'Integrative Approaches in Functional Genomics to Identify Genetic Dependencies in Paediatric Cancer'</i></p> <p>Dr Claire Sun is an early career researcher with a strong interest in the role of epigenetic machinery in tumorigenesis. Dr Sun undertook her Masters at the University of Melbourne, with a research focus on non-coding RNA biomarkers in Alzheimer's disease, from which she gained experience in epigenetic biomarker research.</p> <p>During her PhD, which she completed at Monash University, she performed pioneering work in epigenetic regulation of mitochondrial DNA in tumorigenesis, which eventually culminated in three major research papers.</p>
2:30 - 2:40	<p>Dr Lin Xiao Children's Cancer Institute <i>'Chromatin destabilization by CBL0137 and panobinostat leads to robust interferon response and disease regression in high-risk childhood cancer models'</i></p> <p>Dr Lin Xiao is a Cancer Institute NSW Early Career Fellow currently based at the Children's Cancer Institute (CCI) in Sydney. Prior to joining CCI, she obtained her PhD from the University of North Carolina at Chapel Hill in the United States, followed by one year of postdoctoral fellowship at the National Cancer Institute. Building on her background on tumour microenvironment, her current projects focus on understanding the mechanisms of action underlying drug synergy in neuroblastoma and other childhood cancers. As an early career researcher, she has published extensively, and her research has also been featured on the covers of high impact journals such as <i>Cancer Research</i> and <i>Journal of Clinical Investigation</i>.</p>
2:40 - 3:00	<p>A/Prof David Ziegler Children's Cancer Institute <i>'Novel therapies for DIPG – from bench to bedside'</i></p> <p>A/Prof David Ziegler is a senior Staff Specialist in the Kids Cancer Centre at Sydney Children's Hospital and has expertise in neuro-oncology and early phase clinical trials. A/Prof Ziegler completed his clinical training in paediatric haematology and oncology at Sydney Children's Hospital. From 2005-2007 he was a Fulbright Scholar at the Dana Farber Cancer Institute, Harvard Medical School and Children's Hospital Boston. His research focused on the preclinical and clinical development of novel therapies for paediatric brain tumours.</p> <p>A/Prof Ziegler has established an Australian translational research program to develop novel therapies for children with cancer, and has led several national and international early phase clinical trials. He is a conjoint Associate Professor at the University of New South Wales and a Group Leader at the Children's Cancer Institute (CCI), where his preclinical research focuses on novel therapies for childhood brain tumours. He is deputy director of the Kids Cancer Alliance – a translational research program supported by the Cancer Institute NSW. He leads the national precision medicine trial through the Zero Childhood Cancer Program for children with high risk malignancies.</p>

3:00 - 3:40	<p>Dr Nada Jabado McGill University (Canada) <i>'Oncohistone-mediated tumorigenicity: deciphering "the Peter Pan Syndrome"'</i></p> <p>Dr Nada Jabado is a Professor of Pediatrics at McGill University and paediatric neuro-oncologist at the Montreal Children's Hospital. She completed her residency in paediatrics with a specialisation in hemato-oncology. She also obtained a PhD in Immunology in Paris, France, followed by a postdoctoral fellowship in biochemistry at McGill.</p> <p>Dr Jabado began her career as an independent investigator at McGill in 2003, pioneering a research program in paediatric brain tumors. Her group uncovered that paediatric high-grade astrocytomas (HGA) are molecularly and genetically distinct from adult tumours. More importantly, they identified a new molecular mechanism driving paediatric HGA, namely recurrent somatic driver mutations in the tail of histone 3 variants (H3.3 and H3.1).</p> <p>Dr Jabado's ground-breaking work has created a paradigm shift in cancer with the identification of histone mutations in human disease which has revolutionised this field, as the epigenome was a previously unsuspected hallmark of oncogenesis, thus linking development and what we now know are epigenetic-driven cancers. She has been inducted as a Fellow to the Royal Society of Canada, a member of the CIHR Governing Council, a member of the Canadian Academy of Health Sciences and was recently awarded the Israel Cancer Research Fund Award for Women of Action.</p>
3:40 - 4:00	<p>Dr Katherine (Kate) Johnson Children's Cancer Foundation <i>'The Parent Perspective'</i></p> <p>Kate Johnson is the mother of David, who was diagnosed in 2012 with Acute Lymphoblastic Leukemia (ALL) at 3 years of age. Now 10, and after many complicated treatments, David is in remission but carries the scars of a childhood interrupted. In addition to being David's mother, Kate is a Ph.D. qualified professional with academic research experience at leading medical research institutions including Harvard Medical School. Her experience includes hands-on management of data-intensive research programs, facilitation of research collaborations, analysis and publication of research outcomes, submission of grant applications, development and documentation of core operating policies and procedures, and development / delivery of training programs with leading public and private sector medical research organisations. Kate is the current Chair of the Children's Cancer Centre Parent's Advisory Group at the Royal Children's Hospital in Parkville.</p>
4:00	<p>NETWORKING DRINKS AND CANAPÉS Sponsored by Children's Cancer Foundation</p>