

# Contemporary strategies for the prevention and management of disease in the 2020s

15<sup>th</sup> Indo-Australian Biotechnology Conference

16-18 November 2019

Adelaide, South Australia



## DAY 1 - Saturday, 16 November

9:30 - 10:00	Registration
10:00 - 10:10	<b>Welcome:</b> Wayne Tilley (Dame Roma Mitchell Cancer Research Laboratories, University of Adelaide, Adelaide), Sheel Nuna (Queensland University of Technology, Brisbane)
10:10 - 10:20	<b>Opening:</b> Caroline McMillen, Chief Scientist South Australia, Adelaide
10:20 - 10:50	<b>Keynote Speaker:</b> Vinod Scaria, CSIR Institute of Genomics and Integrative Biology, New Delhi <i>"Personal genomes to precision medicine - Experiences from India"</i>
10:55 - 11:15	Break (Coffee)
11:15 - 12:40	<b>Session 1: Developmental processes in disease: new roles for old friends</b> Chairperson: Frank Gannon (QIMR Berghofer Medical Research Institute, Brisbane)
	1. Kum Kum Khanna (QIMR Berghofer Medical Research Institute, Brisbane) <i>"DNA damage response in normal tissue homeostasis"</i>
	2. Natasha Harvey (Centre for Cancer Biology, Adelaide) <i>"Understanding the genetic and developmental basis of human lymphatic vascular disease"</i>
	3. Raman Sharma (University of Adelaide, Adelaide) <i>"THOC2 variation implicates mRNA export in neurodevelopmental disorders: 45 years of perseverance pays off"</i>
	4. Anuranjan Anand (Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru) <i>"Pathogenesis of juvenile myoclonic epilepsy: Defective genes and malfunctioning neuronal circuits?"</i>
12:40 - 1:30	Lunch
1:30 - 3:00	<b>Session 2: Bridging basic science and public health outcomes</b> Chairperson: Klaus-Martin Schulte (Australian National University, Canberra)
	1. Anthony Cunningham (Westmead Institute for Medical Research, Sydney) <i>"Striking improvements in vaccine efficacy in the ageing through new immunologic strategies"</i>
	2. Kumarasamy Thangaraj (CSIR - Centre for Cellular and Molecular Biology, Hyderabad) <i>"Population genomics and public health"</i>
	3. Meru Sheel (Australian National University, Canberra) <i>"Operational research in public health emergencies for prevention and control of infectious diseases outbreaks"</i>
	4. Sutapa B. Neogi (Public Health Foundation of India, New Delhi) <i>"Walking the fine line between science and culture: its impact on health"</i>
3:00 - 3:20	Break (Coffee)
3:20 - 4:50	<b>Session 3: The disease micro-environment</b> Chairperson: Rik Thompson (Queensland University of Technology, Brisbane)
	1. Severine Navarro (QIMR Berghofer Medical Research Institute, Brisbane) <i>"Hookworms and gut microbiome: focus on new therapeutic avenues"</i>
	2. Bhupinder Pal (Olivia Newton-John Cancer Research Institute, Melbourne) <i>"Using ScRNAseq to identify molecular events that shape tumour heterogeneity and microenvironment"</i>
	3. Michael Samuel (Centre for Cancer Biology, Adelaide) <i>"Probing biomechanical and biochemical inter-relationships in breast cancer progression"</i>
	4. Steve Birrell (University of Adelaide, Adelaide) <i>"Breast density – the hidden danger"</i>

4:50 - 5:00	Break
5:00 - 6:05	<b>Session 4: Epigenetics vs genetic drivers of disease</b> Chairperson: Jyotsna Batra (Queensland University of Technology, Brisbane)
	1. Shama Prasada (Manipal Academy of Higher Education, Manipal) <i>"Understanding the regulation and biological function of miRNA clusters in cervical cancer"</i>
	2. Luke Selth (Flinders University / University of Adelaide, Adelaide) <i>"Elucidating the androgen receptor cistrome in prostate cancer"</i>
	3. Sudha Rao (University of Canberra, Canberra) <i>"Epigenetic driven reinvigoration: Progress from mechanism to therapeutics and liquid biopsies in immune-oncology"</i>
6:10 - 6:40	<b>Special Presentation:</b> Mohan Rao, Consultant Transplant Surgeon, Adelaide <i>"The history and impact of renal transplantation in India"</i> Chairperson: Wayne Tilley
6:40 - 6:50	<b>Welcome to Country</b>
7:15	<b>Welcome Dinner</b>
<b>DAY 2 - Sunday, 17 November</b>	
9:00 - 10:35	<b>Session 5: Stem cells: mechanisms and models of disease</b> Chairperson: Elizabeth Williams (Queensland University of Technology, Brisbane)
	1. Mark Nottle (University of Adelaide, Adelaide) <i>"Embryonic stem cells. A tale of mice and men as well as pigs"</i>
	2. Sharmila Bapat (National Centre for Cell Science, Pune) <i>"Cancer stem cells and phenotypic plasticity in metastases"</i>
	3. Cedric Bardy (South Australian Health & Medical Research Institute, Adelaide) <i>"Modeling human brain disorders in vitro"</i>
	4. Annapoorni Rangarajan (Indian Institute of Science, Bengaluru) <i>"Stem cells in breast cancer initiation and progression"</i>
10:35 - 11:10	Break (Coffee)
11:10 - 12:45	<b>Session 6: Omics and disease</b> Chairperson: John Bruning (University of Adelaide, Adelaide)
	1. Lisa Butler (University of Adelaide / South Australian Health & Medical Research Institute, Adelaide) <i>"Lipidomics identifies clinically targetable biomarkers for prostate cancer"</i>
	2. Daniel Kolarich (Institute for Glycomics, Griffith University, Brisbane) <i>"Glycomics and glycoproteomics - deciphering the glyco-language of diseases"</i>
	3. Mark Corbett (University of Adelaide, Adelaide) <i>"Genomic approaches for discovery of non-coding variants in neurodevelopmental disorders"</i>
	4. Ashwani Kumar (ICMR-Vector Control Research Centre, Puducherry) <i>"Proteogenomic and transcriptomic approaches for accurate assembly and annotation of genomes"</i>
12:45 - 1:45	Lunch
1:45 - 3:25	<b>Session 7: New insights into disease mechanisms and novel therapeutic targets</b> Chairperson: Wendy Ingman (Basil Hetzel Institute/University of Adelaide, Adelaide)
	1. Sharad Kumar (Centre for Cancer Biology, Adelaide) <i>"Caspase-2 dependent suppression of aneuploidy and tumourigenesis"</i>
	2. Liz Caldon (Garvan Institute for Medical Research, Sydney) <i>"BRCA1 mutation stabilises cyclin E1 in breast cancer to create a therapeutically targetable subset"</i>
	3. David Waugh (Queensland University of Technology, Brisbane) <i>"Re-education of tumor-associated macrophages in advanced prostate cancer"</i>
	4. Harsha Gowda (QIMR Berghofer Medical Research Institute, Brisbane) <i>"Novel avenues for therapeutic intervention based on proteogenomic landscape of esophageal squamous cell carcinoma"</i>
3:25 - 3:50	Break (Coffee)
3:50 - 5:25	<b>Session 8: Immune response and immunotherapy</b> Chairperson: Michael Brown (Royal Adelaide Hospital, Adelaide)
	1. Shaun McColl (University of Adelaide, Adelaide) <i>"The atypical chemokine receptor ACKR4 restrains anti-tumour immunity through regulation of CCL21"</i>
	2. Simon Phipps (QIMR Berghofer Medical Research Institute, Brisbane) <i>"Novel approaches for the treatment of viral bronchiolitis and prevention of later asthma"</i>

	3. Nic Waddell (QIMR Berghofer Medical Research Institute, Brisbane) <i>“Whole genome and RNAseq sequencing of cancers to predict response to immunotherapy”</i>
	4. Rajiv Khanna (QIMR Berghofer Medical Research Institute, Brisbane) <i>“Harnessing the cellular immunity to fight cancers and infectious complications”</i>
5:25 - 5:30	<i>Short break</i>
5:30 - 6:00	<b>Special Presentation</b> - Guest speaker: Professor Tom Calma AO, Chancellor, University of Canberra, Canberra. <i>“Major challenges and successes in Indigenous health with a focus on prevention strategies and the importance of social and cultural determinants”</i> Chairperson: Sheel Nuna
6:10 - 6:30	Buses depart from AHMS for conference dinner
7:00	<b>Conference Dinner</b>
<b>DAY 3 - Monday, 18 November</b>	
9:00 - 10:35	<b>Session 9: Better models of human disease</b> Chairperson: Judith Clements (Queensland University of Technology, Brisbane)
	1. Maria Kavallaris (Children’s Cancer Institute, University of New South Wales, Sydney) <i>“3D bioprinting tumours: Applications in drug screening and cancer biology”</i>
	2. Kaylene Simpson (Peter MacCallum Cancer Centre, Melbourne) <i>“Using high throughput cellular phenotyping to screen for novel disease targets”</i>
	3. Renea Taylor (Monash University, Melbourne) <i>“Using patient-derived xenografts to unveil prostate cancer phenotypes”</i>
	4. Theresa Hickey (University of Adelaide, Adelaide) <i>“What’s best for breast”</i>
10:35 - 11:00	<i>Break (Coffee)</i>
11:00 - 12:30	<b>Session 10: Towards realising precision medicine</b> Chairperson: Wayne Tilley (University of Adelaide, Adelaide)
	1. Shom Goel (Peter MacCallum Cancer Centre, Melbourne) <i>“CDK4/6 inhibition in cancer – more than cell cycle arrest”</i>
	2. Chamindie Punyadeera (Queensland University of Technology, Brisbane) <i>“Liquid biopsy for detection of patients likely to develop metastasis in HNC and NSCLC”</i>
	3. Melissa Davis (Walter and Eliza Hall Institute, Melbourne) <i>“Molecular phenotypes and precision medicine: In silico sorting, subtyping and single patient analysis”</i>
	4. Prashant Kumar (Institute for Bioinformatics, Bengaluru) <i>“Patient derived circulating tumor cell cluster phenotype allows monitoring response to treatment and predicts survival”</i>
12:30 - 1:20	<i>Lunch</i>
1:20 - 3:20	<b>Session 11: Realising precision medicine</b> Chairperson: Frank Gannon (QIMR Berghofer Medical Research Institute, Brisbane)
	1. Philippa Middleton (South Australian Health & Medical Research Institute, Adelaide) <i>“Can we reduce preterm birth through precision medicine?”</i>
	2. Deborah White (University of Adelaide / South Australian Health & Medical Research Institute, Adelaide) <i>“A systematic approach to understanding the factors that impact response of ALL patients to current therapies”</i>
	3. Rebecca Robker (University of Adelaide, Adelaide) <i>“Childhood obesity starts with egg and sperm”</i>
	4. Susan Woods (South Australian Health & Medical Research Institute, Adelaide) <i>“Patient derived organoids to guide personalised treatment for bowel cancer”</i>
	5. Elgene Lim (Garvan Institute of Medical Research, Sydney) <i>“Window (trials) to precision medicine”</i>
3:20 - 3:30	<i>Short Break</i>
3:30 - 4:00	<b>Keynote Speaker:</b> Alex Brown, Theme Leader, Aboriginal Health Equity, South Australian Health & Medical Research Institute, Adelaide <i>“Overcoming inequity among indigenous Australians”</i>
4:00 - 4:15	<b>Meeting Close</b> - Wayne Tilley and Sheel Nuna