

# Mucosal Immunology and Microbiome Symposium

Peppers Resort, Noosa Heads

17-19 May, 2023

## PROGRAM

Day 1 – Wednesday 17 May			
12:00 – 1:30	Registration opens	Peppers Resort, 33A Viewland Drive, Noosa Heads	
Session 1 - Epithelial Biology			
1:30 – 1:35	Conference opening		
1:35 – 2:15	Gabrielle Belz	UQDI	Stealthy Epithelial-Immune Cell Signalling Determine Mucosal Homeostasis
2:15 – 2:45	Gerard Kaiko	HMRI	Interrogating gene and microbiome susceptibility factors in IBD using intestinal organoids for drug discovery
2:45 – 3:00	Tiane Blackman	Garvan Institute	Altered intestinal permeability and villous architecture in new mouse models of mevalonate kinase deficiency
3:00 – 3:15	Wang Cao	UQ	The 'Gatekeeper' of Intestine – Microfold Cells Orchestrate Microbe-Immune Interactions
3:15 – 3:30	Rabina Giri	Mater Research Institute	Exome sequencing of a family with a severe colitis phenotype identifies a rare missense mutation in a novel IBD gene
3:30 – 4:00	<i>Afternoon Tea / Check-in</i>		
Session 2 - Maternal/neonatal immunity			
4:00 – 4:30	Sarah Robertson	Robinson Research Institute	The mucosal immune response to conception and embryo implantation
4:30 – 5:00	Archita Mishra	Telethon Kids Institute	Microbial-Immune priming in early life and disease tolerance
5:00 – 5:15	Valerie Verhasselt	UWA	Colostrum is required for the postnatal ontogeny of small intestine innate lymphoid type 2 cells
5:15 – 5:30	April Raftery	Monash	Hyperactive eosinophils in the postnatal lung impair lung development and promote persistent lung inflammation
5:30 – 5:45	Daniel Howard	QIMRB	OPN-deficient milk predisposes neonatal mice to severe lower respiratory tract infection by impairing dendritic cell expansion.
5:45 – 6:00	Severine Navarro	QIMRB	Investigating the effect of perinatal diet on the microbiome, immune and brain development
6:00 – 9:00	<i>Welcome reception and poster session, with drinks and canapés</i>		

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Day 2 – Thursday 18 May			
<b>Session 3 - Metagenomics workshop</b>			
8:30 – 9:30	Gene Tyson	QUT	Improving human health with precision microbiome science
<b>Nutrition and Immunity</b>			
9:30 – 10:30	Nick Collins (INTL SPEAKER)	Cornell	Nutritional Optimization of Immunity
10:30 – 11:00	<i>Morning Tea</i>		
<b>Session 4 – Microbiome and disease</b>			
11:00 – 11:30	Ben Marsland	Monash	Mechanistic links between gut microbial dysbiosis and lung inflammation
11:30 – 12:00	Connie Wong	Monash	Impact of stroke on gut functions
12:00 – 12:15	Bree Tillett	UQ	Mining the gut microbiota for type 1 diabetes preventative factors
12:15 – 12:30	Antiopi Varelias	QIMRB	Immunomodulatory effects of FMT mitigate GVHD and improve BMT outcome
12:30 – 12:45	Melody Dobrinin	QUT	Characterisation of a novel gut bacterium for development of a live biotherapeutic to treat inflammatory bowel disease
12:45 – 2:00	<i>Lunch</i>		
<b>Session 5 - Immune homeostasis</b>			
2:00 – 2:30	Cyril Seillet	WEHI	Neural control of non-canonical function of innate immune cells
2:30 – 3:00	Steve Nutt	WEHI	The diversity of tissue-resident plasma cells
3:00 – 3:15	Praveena Thirunavukkarasu	Monash	Understanding the molecular recognition of <i>Bacteroides fragilis</i> glycosphingolipids by Natural Killer T-cell receptor
3:15 – 3:30	Isabelle Montgomerie	VUW	A critical role for NKT cells in the generation of high affinity antibody at the mucosa
3:30 – 4:00	<i>Afternoon Tea</i>		
<b>Session 6 - Lightning talks (60 min; 8 x 6min)</b>			
4:00	Nic West	Griffith	Spatial transcriptional profiling identifies inflammatory features of the mucosa in severe nasal polyposis
4:06	Kim Parkin	Telethon Kids Institute	Feeding method is the key factor characterizing the composition and functional profiles of the 6-month infant gut microbiome
4:12	Lisa Ciacchi	Monash	CD4 <sup>+</sup> T cell recognition of a highly conserved bacterial epitope of pneumolysin presented by a broadly expressed HLA allotype

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4:18	Emily Hoedt	UON	The Microleaks study: 16S community profile and metagenomic shotgun sequencing signatures associated with anastomotic leak
4:24	Grace Burns	UON	Duodenal type 2 and type 17 effector lymphocyte are increased in duodenal biopsies from functional dyspepsia patients
4:30	Danika Hill	MCRI	Making sense of mucosal immune responses in an experimental human <i>Streptococcus pyogenes</i> infection model
4:36	Lauren Schooth	UQ	Food additives have variable effects on NF-KB-mediated gene expression modulated by duodenal microbiota secretomes
4:42	Wenkang Feng	UQ	Do anti-LPS antibodies to patient microbiota associate with worse outcomes in Crohn's disease?
6:00 – 9:00	<i>Dinner with an expert</i>		<i>Tables have been booked (specific times tbc) - please be sure to be punctual!</i>

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Day 3 – Friday 19 May			
<b>Session 7 - Intestinal Tregs</b>			
8:00 – 9:00	Chrys Brown (INTL SPEAKER)	MSKCC	A novel lineage of ROR $\gamma$ t+ antigen presenting cells instructs intestinal tolerance
9:00 – 9:30	Ajith Vasanthakumar	ONJCRI	Molecular and functional heterogeneity of gut-resident regulatory T cells
9:30 – 10:00	Lucie Rankin	WEHI	A distinct programmed cell death pathway uniquely controls gut-resident ST2 <sup>+</sup> Treg homeostasis
10:00 – 10:15	Iain Comerford	AU	Novel populations of Tr1 cells contribute to the resolution of acute influenza A virus infection
10:15 – 10:30	Daniel Howard	QIMRB	Gut-derived propionate protects against severe lower respiratory tract infections via the induction of CCL25 by airway epithelial cells and associated recruitment of CCR9+ plasmacytoid dendritic cells.
10:30 – 11:00	<i>Morning Tea</i>		
<b>Session 8 - Infections and vaccines</b>			
11:00 – 11:30	Laura Cook	Uni Melb	Associations between microbiome and adaptive immunity to bacterial antigens
11:30 – 11:45	Tufael Ahmed	QIMRB	Alterations to the neonatal faecal metabolome consequent to a maternal high fat diet predispose to severe lower respiratory infection by inducing GCSF-mediated systemic chronic inflammation
11:45 – 12:00	Kevin Man	Doherty Institute	Precursor and differentiation potential of intestinal tissue resident memory T cells during reinfection are regulated by TCF1 and TGF-beta signalling
12:00 – 12:15	Sohinee Sarkar	MCRI	Vaccinating against the protease HtrA protects against Helicobacter pylori-induced gastritis
12:15 – 12:45	Kerry Hilligan	Malaghan Institute	Previous helminth infection enhances murine host resistance to SARS-CoV-2 through pulmonary macrophage dependent T cell activation.
12:45 – 1:00	Conference Close		Awards announced, closing remarks
2:00pm	<i>Bus departs for Brisbane</i>		