



# The 2021 Host-Pathogen Communication Conference

Programme, Version 20 October. All times are GMT

With thanks to our sponsors:



**The Knell Family  
Center for  
Microbiology  
(Weizmann Institute)**



**Wednesday 10 November 2021; all times in GMT (Ireland time)**

*Tercentenary Hall TBSI & online*

**09:00 – 12:10 - Session 1,**

*Chairs - Andrew Bowie & Rachel McLoughlin (Ireland)*

09:00:00		Andrew Bowie (Ireland)	Opening remarks
		Kingston Mills (Ireland)	Welcome to TBSI
09:30:00	09:45:00	Megan Hanlon (Ireland)	Enrichment of a novel, pathogenic macrophage population with distinct transcriptional and metabolic signatures in Rheumatoid Arthritis synovial tissue
09:45:00	10:00:00	Chloe Choi (Ireland)	SLC7a5 amino acid transporter regulates metabolic responses in activated NK cells in vivo.
10:00:00	10:15:00	Craig McEntee (Ireland)	A subset of CD4+ effector memory T cells suppress T cell-mediated immunity to pulmonary viral infection via integrin $\alpha\beta 8$ -dependent activation of latent TGF $\beta$
10:15:00	10:30:00	Lucy Curham (Ireland)	IL-17-producing CD4 tissue-resident memory T cells mediate protective immunity against <i>Bordetella pertussis</i> infection in the nasal mucosae
10:30:00	10:45:00	Hannah Fitzgerald (Ireland)	<i>Trypanosoma Brucei</i> secreted aromatic ketoacids represent novel therapies for inflammatory diseases through suppression of pro-inflammatory responses in primary human immune cells.
10:45:00	11:15:00		<b>Coffee break</b>
11:15:00	11:30:00	Marcin Baran (Ireland)	A novel role of mouse PYHIN protein Ifi207 in transcriptional regulation of pro-inflammatory genes
11:30:00	12:10:00	Kate Fitzgerald (United States)	<b><i>Keynote lecture 1 (sponsored by GSK): Mechanisms to limit Sars-CoV2 infection</i></b>

**12:10 – 13:15 - Lunch and Online Poster Networking: Poster List A – see page 6**



**Wednesday 10 November 2021; all times in GMT (Ireland time)**

*Tercentenary Hall TBSI & online*

**13:15 – 16:30 - Session 2**

*Chairs – Cliona O’Farrelly (Ireland) & Jose Bengoechea (UK)*

13:15:00	13:55:00	<b>Sophie Helaine</b> (United States)	<b>Keynote lecture 2: Salmonella antibiotic persists during infection</b>
13:55:00	14:10:00	Alanna Kelly (Ireland)	<i>Staphylococcus aureus</i> -induced immunosuppression facilitates persistence during nasal colonisation
14:10:00	14:25:00	Keren Turton (UK)	The Type 3 Secretion System is a crucial mediator of macrophage- <i>Achromobacter</i> spp. interaction
14:25:00	14:40:00	Amy Dumigan (UK)	<i>Klebsiella pneumoniae</i> triggers a singular macrophage polarization to promote infection
14:40:00	15:05:00		<b>Coffee Break</b>
15:05:00	15:20:00	David Loane (Ireland)	Early or Late Bacterial Lung Infection Increases Mortality After Traumatic Brain Injury in Male Mice and Chronically Impairs Monocyte Innate Immune Function
15:20:00	15:35:00	Raminder Singh (Ireland)	A Crohn's disease-associated pathobiont synergise with NSAID to promote inflammation and cell death in susceptible host via the caspase-8/NLRP3 axis
15:35:00	15:50:00	Natalia Munoz-Wolf (Ireland)	NLRP3 and the gut-lung axis of immune regulation regulate susceptibility to pneumococcal pneumonia
15:50:00	16:30:00	<b>Richard Flavell</b> (United States)	<b>Keynote lecture 3: A humanized model of Covid-19: Lessons on mechanisms of pathogenesis</b>



**Thursday 11 November 2021; all times in GMT (Ireland time)**

*Online*

**09:00 – 11:35 - *Session 3***

*Chairs – Soren Paludan (Denmark) & Ronen Hazan (Israel)*

09:00:00	09:40:00	<b>Rotem Sorek</b> (Israel)	<b><i>Keynote lecture 4: Interactions between bacteria and the viruses that infect them</i></b>
09:40:00	09:55:00	Ortal Yerushalmy (Israel)	Clinical phage microbiology and phage therapy in the new era
09:55:00	10:10:00	N.M. Høyland-Kroghsbo (Denmark)	Phage infection restores PQS signaling of a <i>Pseudomonas aeruginosa lasI</i> quorum-sensing mutant
10:10:00	10:20:00		<b>Short break</b>
10:20:00	10:35:00	Adi Abeda Manelis (Israel)	Aerobic bacteria produce nitric oxide through denitrification during microbial interactions
10:35:00	10:50:00	Noa Barak Gavish (Israel)	Behavioral switch in bacteria in response to algal metabolites
10:50:00	11:05:00	Orna Gorelik (Israel)	The effect of extracellular environment molecules on Enteropathogenic E coli virulence
11:05:00	11:20:00	Noa Bossel Ben Moshe (Israel)	Deciphering the immune subsets in Salmonella Typhi human infection which underly disease outcome
11:20:00	11:35:00	Danielle Karo-Atar (Canada)	Helminths battle type 2 immunity for control of the intestinal stem cell niche

**11:35 – 12:45 - *Lunch and Online Poster Networking: Poster List B – see page 7***



**Thursday 11 November 2021; all times in GMT (Ireland time)**

*Online*

**12:45 – 15:30 - Session 4**

*Chairs – Anat Herskovits (Israel) & Christian Holm (Denmark)*

12:45:00	13:00:00	Sandip Patra (India)	An analysis of Candida glabrata-epithelial cell interaction
13:00:00	13:15:00	Roni Ben Ami (Israel)	Liquid biopsies reveal prognostic and universal aspects of tissue specific cell death in COVID19
13:15:00	13:30:00	Jiri Zahradnik (Israel)	Mimicking SARS-Cov2 spike evolution results in a potent inhibitor of predicts future developments
13:30:00	13:45:00	Seongim Yoon (Israel)	Coordinating immune-defence functions of MLKL: endosomal targeting of MLKL by site specific ubiquitination facilitates lysosomal destruction of intracellular pathogens
13:45:00	14:00:00	Fiachra Humphries (United States)	A diamidobenzimidazole STING agonist protects against SARS-CoV-2 infection
14:00:00	14:10:00		<b>Short break</b>
14:10:00	14:25:00	Manja Idorn (Denmark)	Mouse models carrying patient-derived mutations in IRF3 and TBK1 enable mechanistic characterization of herpes simplex encephalitis
14:25:00	14:40:00	Renée M. van der Sluis (Denmark)	Plasmacytoid dendritic cells sense SARS-CoV-2 through TLR2-IL6 and TLR7-INFα pathways that protect epithelial cells from infection
14:40:00	15:20:00	<b>Jon Kagan</b> (United States)	<b><i>Keynote Lecture 5: Initiation and Regulation of Innate Immunity</i></b>
15:20:00	15:30:00	Neta Regev-Rudzki (Israel)	<b><u>Awards presentation:</u></b> Poster prizes sponsored by Roche. Oral prizes sponsored by <b>The Knell Family Centre for Microbiology.</b>
		& Andrew Bowie (Ireland)	Closing remarks



## APPENDIX: POSTERS

### LIST A (for discussion Wednesday 10<sup>th</sup>)

11285	Donal	Cox	Ireland	Lactate alters metabolism in human macrophages and improves their ability to kill Mycobacterium tuberculosis
11290	Lorraine	Thong	Ireland	Dexamethasone Reduces Metabolic Function and Subsequent Activation of Human Macrophages to Mycobacterium tuberculosis.
11230	Abel	Cruz Camacho	Israel	Automated transcription profiling to monitor malaria parasite sexual differentiation
11276	Amit	Rimon	Israel	In-Vitro and In-Vivo Topical Phage Therapy for the Treatment of Acne in an Acne Mice Model
11281	Valerya	Nisnevich	Israel	Universal vs. pathogen-specific immune response responses categorized by cell-type specific responses
11282	Shani	Peleg	Israel	Impaired RNA editing in alpha cells
11283	Udi Ehud	Knebel	Israel	Adar-mediated RNA editing in pancreatic beta-cells prevents aberrant innate immune activation and diabetes
11194	Ciana	Diskin	Ireland	The trypanosome-derived metabolite indole-3-pyruvate inhibits prostaglandin production in macrophages by targeting COX2
11209	Phatcharida	Jantaree	Germany	USP48 enhances the anti-apoptotic activity of NF-kB-induced A20 in Helicobacter pylori-infected epithelial cells
11239	Sarah	Swoboda	Ireland	Type III Interferon lambda and antiviral innate immunity in primary bovine tracheal epithelial cells
11254	Elaine	Dempsey	Ireland	Immunomodulatory Properties of a Naturally-Derived Macrofungal?-Glucan in Gastrointestinal Inflammation
11149	Paula	Abou Karam	Israel	Analysis of extracellular vesicles from malaria-infected erythrocytes by field flow fractionation reveal distinct nanoparticle subsets
11263	Diogo	Matos da Fonseca	UK	C. albicans VS C. parapsilosis: Exploring differences in the macrophage immune response induced by two distant cousins
11140	Shira	Zelikman	Israel	Characterization of PemB, a novel effector of Pseudomonas aeruginosa type III secretion system
11229	Barry	Moran	Ireland	Inflammasome activation drives inflammation in the skin disease hidradenitis suppurativa
11121	Raj	Kumar Sadhu	Israel	Theoretical model of efficient phagocytosis driven by curved membrane proteins and active cytoskeleton forces
11129	Esther	Shmidov	Israel	PrrT/A a Pseudomonas aeruginosa Bacterial Encoded Toxin-Antitoxin System Involved in Prophage Regulation
11187	Martin	Caffrey	Ireland	Bacterial Lipoproteins as Players in Host-Pathogen and Host-Commensal Communication



11203	Kiefer	Ramberg	Ireland	Structure, Function, and Anti-Viral Inhibition of the SARS-CoV-2 Envelope Protein Ion Channel
11250	Yael	Noy	Israel	Communication crosstalk between the host CXCL10 chemokine and the malaria parasite
11261	Simon	Comerma Steffensen	Denmark	BPP-BRACHYNH2 peptide induces vasodilatation by activation of argininosuccinate synthase in LPS induced rat mesenteric small arteries
11195	Lewis	Macdonald	UK	Characterisation of polymyxin B resistance in clinical isolates of Achromobacter species
11145	Joanna	Laskowska	Ireland	Investigation of the role of itaconate in anti-viral responses in idiopathic pulmonary fibrosis patients during disease progression.
11163	Jamie	Murphy	UK	The Elongator complex regulates TLR4 and type I interferon gene induction responses
11177	Joanna	Sa Pessoa	UK	A trans-kingdom Klebsiella pneumoniae T6SS effector targets the mitochondria inducing NLRX1 and ROS production to promote infection
11202	Niamh	Duggan	Ireland	Bacterial Adaptation in Chronic Lung Infection
11200	Jenia	Gershberg	Israel	Transmembrane domains of type III-secreted proteins affect bacterial-host interactions in enteropathogenic E. coli
11235	Mihai	Sularea	Ireland	RIG-I induced reactive oxygen species drive metabolic changes that modulate the antiviral immune response in hepatocytes

#### LIST B (for discussion Thursday 11<sup>th</sup>)

11292	Simon	O'Shaughnessy	Ireland	Proteomic Analysis of metabolism of in vivo conventional dendritic cell subsets
11175	Dearbhla	Murphy	Ireland	An adenoviral vector vaccine against SARS-CoV2 elicits trained immunity in humans
11176	Sarah	Connolly	Ireland	The effect of smoking on alveolar macrophage mediated inflammation in the human lung
11226	Federica	Giangrazi	Ireland	Dysregulation of IL-17 and Calprotectin in the female reproductive tract affects pregnancy outcome following assisted reproductive therapy.
11286	Ruth	Haverty	Ireland	SARS-CoV-2 infects neurons, astrocytes and choroid plexus epithelial cells in the human central nervous system.
11159	Aleksandra	Kusiak	Ireland	Investigation of the Molluscum Contagiosum Virus Protein MC009 as a Novel Inhibitor of Innate Signalling
11210	Connor	Bamford	UK	Conserved induction of distinct antiviral signalling kinetics by primate interferon lambda 4 proteins



11197	Conor	Smith	Ireland	Single-cell transcriptomic profiling of hyperproliferative keratinocytes in hidradenitis suppurativa
11204	Chloe	McKee	UK	Priming is a fundamental mechanism of inflammasome regulation in myeloid cells
11223	Emilio	Vozza	Ireland	Intracellular survival of <i>S. aureus</i> within phagocytes is facilitated by the modulation of multiple host cell pathways.
11287	Jamie	Sugrue	Ireland	Impaired TLR9 induced type I interferon responses in women who spontaneously resolved hepatitis C virus infection.
11288	Jamie	Sugrue	Ireland	Enhanced type I interferon responsiveness in hepatitis C virus resistant women from the Irish anti-D cohort.
11291	James	Phelan	Ireland	Understanding innate immune responses during early tuberculosis infection: a role for your friendly neighbourhood Neutrophil?
11199	Supattra	Chaithongyot	Germany	CSN-associated deubiquitinylase STAMBPL1 stabilises Survivin and suppresses apoptotic cell death
11259	Ciara	Nulty	Ireland	Novel role for caspase-11 in host defence against <i>Mycobacterium tuberculosis</i> .
11143	Shira	Zelikman	Israel	Characterization of PemB, a novel effector of <i>Pseudomonas aeruginosa</i> type III secretion system
11188	Alejandra	Zarate-Potes	UK	Meta-analysis of <i>C. elegans</i> transcriptomics implicate Hedgehog-like signaling in host-microbe interactions
11211	Yuliya	Skabytska	Ireland	Type I IFNs and IL-18 synergistically enhance IFN $\gamma$ production in NK cells by upregulating cMyc-dependent iron metabolism.
11190	Namrata	Iyer	Ireland	Free microbial metabolites from healthy and dysbiotic gut microbiota differentially regulate intestinal immune response
11191	Serena	Foo	Ireland	Cytokine synergy and glycolysis used to promote aggressive phenotype in fibroblasts of children with Down's syndrome-associated arthritis
11236	Ismael	Obaidi	Ireland	Unlocking Nature's Pharmacy from Bogland Species' - Immunomodulatory and anti-inflammatory drug candidates from nature-
11289	Hannah	Brown	Ireland	Novel in vitro and ex vivo models for investigating Hepatitis E Virus infection
11162	Anamika	Battu	India	An aspartyl protease-mediated cleavage regulates structure and function of a flavodoxin-like protein and aids oxidative stress survival
11224	Simon	Carlile	Ireland	Investigating <i>S.aureus</i> induced immune training to understand its implication during nasal colonisation
11133	Coralie	Guy	Ireland	Innate immune recognition of dsRNA in respiratory epithelial cells induces IL-1 and IL-18 secretion, cell death and GSDME cleavage





11182	Ryoichi	Sugisawa	Ireland	Clarifying the role of human SARM1, and its NADase activity, in monocytes
11275	Rebecca	Fitzgerald	Ireland	Inhibition of Polycomb Repressive Complex 2 expression and function by Helicobacter pylori.
11152	Orly	Laufman	Israel	Enteroviruses hijack lipid droplets to fuel the biogenesis of replication compartments
11147	Thomas	Phelan	Ireland	Molluscum Contagiosum Virus Protein MC008 is a Novel Inhibitor of Human NFκB