| SUNDAY JUNE 26th, 2022 | |
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| 05:00 PM – 06:00 PM | Registration |
| 06:00 PM – 09:00 PM | Opening Session and Reception |

## MONDAY JUNE 27th, 2022

### Epidemiology and Clinical Aspects of Pertussis

**Session Chairs: Nicky Klein and Scott Halperin.**

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| 08:30 AM - 09:00 AM | **Bernice Aronsson.** Pertussis vaccine studies in Sweden |
| 09:00 AM - 09:15 AM | **Fahima Moosa.** Incidence and transmission dynamics of Bordetella pertussis in an urban and rural community in South Africa, PHIRST study, 2016-2018 |
| 09:15 AM - 09:30 AM | **Anja Saso.** Vaccine-induced antibody responses to pertussis detected in the upper airway of Gambian infants |
| 09:30 AM - 09:45 AM | **Lingzi Xiaoli.** Molecular characterization of seven Bordetella pertussis strains from Brazil with suspected pertactin deficiency |
| 09:45 AM - 10:00 AM | **Michael Weigand.** Integrating genomics into enhanced surveillance of Bordetella pertussis in the United States, 2010–2020 |
| 10:00 AM - 10:30 AM | Morning Break |

### Pertussis Immunity and Vaccinology I

**Session Chairs: Heath Damron and Kingston Mills.**

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| 10:30 AM - 11:00 AM | **Dimitri Diavatopoulos.** Early induction of mucosal type 2 immunity and T-cells is associated with enhanced control of Bordetella pertussis infection in humans. |
| 11:00 AM - 11:15 AM | **Andrew Gorringe.** A comparison of anti-Bordetella pertussis bactericidal antibody responses to natural infection, acellular, whole cell and live attenuated pertussis vaccines |
| 11:15 AM - 11:30 AM | **Megan DeJong.** Utilizing the CpG 1018 adjuvant to improve immune responses to Tdap |
| 11:30 AM - 11:45 AM | **David Dowling.** Development of a TLR7/8 agonist adjuvant formulation to overcome early life hyporesponsiveness to DTaP vaccination |
| 11:45 AM - 12:00 PM | **Pablo Martin Aispuro**. Bordetella pertussis responses in neonates mice born to animals primed with whole-cell versus acellular vaccine in infancy |
| 12:00 PM - 12:30 PM | Lunch |

**12:30 PM - 01:15 PM** **Virtual Poster Session I**

A dynamical model to illustrate the possible evolution of B. pertussis toward a lower virulence under acellular vaccination
**Florian Lecorvaisier**

Protection by Bordetella pertussis against influenza: role of pertussis toxin
**Stephane Cauchi**

Eosinophils and inflammation, the untold story
**Monica Cartelle Gestal**

Identification of residues involved in posttranslational modification of RTX toxins of Gram-negative pathogens
**Michaela Grobarcikova**

Impact of the COVID-19 pandemic on Bordetella pertussis infections in England
**Elise Tessier**

Characteristics of Pertussis-related Deaths Reported in the United States, 2012–2020
**Tami Skoff**

Validation of culture-independent whole genome sequencing pipeline for Bordetella pertussis
**Yanhui Peng**

Pertussis toxin suppresses dendritic cell-mediated delivery of B. pertussis into lung-draining lymph nodes
**Nela Klímová**

Comparison of aP or wP vaccines and primo-exposure against Bordetella pertussis in baboon model
**Mathilde Galhaut**

Agreement between two Commercial Laboratories and CDC's RT-PCR assays in Identification of Bordetella pertussis in the United States
**Marissa Fraire**

Outer membrane vesicle based vaccine used in an heterologous prime-boost scheme prevent Bordetella pertussis nasal mice colonization
**Erika Rudi**

Innate immune response during the catarrhal phase of the pertussis disease
**Ludmila Brázdilová**

| 01:15 PM – 02:00 PM | Virtual Poster Session II |
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Comparative Phosphoproteomics of Classical Bordetellae Elucidates the Potential Role of Serine, Threonine and Tyrosine Phosphorylation in Bordetella Biology and Virulence
**Laurence Don Wai Luu**

Effects of acellular pertussis vaccination on nasal Bordetella pertussis carriage
**Violaine Dubois**

Assessing the Impact of the Modified Council of State and Territorial Epidemiologists Case Definition for Pertussis on Reported Pertussis, 2020
**Amy Blain**

Analysis of pertussis cases in England from 2013- 2016 reveals an increase in circulating pertactin-deficient isolates but no increase in disease severity
**Elise Tessier**

New Model of Persistent Neonatal-like Immunity Reveals Increased Susceptibility to Bordetella pertussis
**Colleen Sedney**

Comparison of US macrolide resistant Bordetella pertussis with those reported worldwide
**Pamela K. Cassiday**

Rapid Screening and Characterization of Vaccine Immunogen-deficiency in clinical Bordetella pertussis isolates, 2012–2020
**Hong Ju**

The Response Regulator RisR Prevents Toxic Overexpression of vrgs in the Bordetella pertussis Bvg--mode
**Qing Chen**

Targeting essential Bordetella pertussis functions to prevent colonization, disease, and transmission
**Timothy Brickman**

Determining the structural features of Bordetella LPS that influence TLR4 recognition and subsequent NFkB signalling
**Kiruthika Manivannan**

pIG25: A tetracycline-inducible gene expression system for Bordetella spp.
**Gyles Ifill**

Bordetella pertussis-induced IDO responses are age-dependent and potentiate severe disease
**Karen Scanlon**

## Pathogenesis and Biology of Bordetellae I

**Session Chairs: Ruiting Lan and Karen Scanlon**

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| 02:00 PM - 02:30 PM | **Scott Stibitz.** RisR – a phantom presence in vrg-regulation. |
| 02:30 PM - 02:45 PM | **Loic Coutte.** Integrative analyses of the direct and indirect RisA regulon of Bordetella pertussis |
| 02:45 PM - 03:00 PM | **Nicholas First.** Disruption of the VIP/VPAC2 Axis Limits Colonization and Enhances Clearance of Bordetella spp. from the Lower Respiratory Tract |
| 03:00 PM - 03:15 PM | **Audra Fullen.** The Bordetella polysaccharide Bps resists antimicrobial peptides and converts Escherichia coli into a respiratory pathogen |
| 03:15 PM - 03:30 PM | **Jana Holubova.** The Fim and FhaB adhesins play a crucial role in nasal cavity infection and Bordetella pertussis transmission in a novel mouse catarrhal infection model |
| 03:30 PM – 03:45 PM | Afternoon Break |
| 03:45 PM - 04:00 PM | **David Rickert.** Peptidoglycan recognition proteins mediate the balance between protective and pathogenic responses to Bordetella pertussis |
| 04:00 PM - 04:15 PM | **David McCulloch.** Investigating fundamental differences in the essentiality of B. pertussis cell wall biosynthesis genes. |
| 04:15 PM - 04:30 PM | **Hiroki Suyama**. Integrating proteomic data with metabolic modelling provides insight into key pathways in Bordetella pertussis biofilms |
| 04:30 PM - 04:45 PM | **Yukihiro Hiramatsu.** The mechanism of pertussis cough revealed by the mouse-coughing model |
| **04:45 PM - 06:30 PM** | **In-Person Poster Session** |

## TUESDAY JUNE 28th, 2022

## Pertussis Immunity and Vaccinology II

**Session Chairs: Tod Merkel and Dimitri Diavatopoulos.**

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| 08:30 AM - 09:00 AM | **Kingston Mills.** The mechanism of protective immunity against nasal infection with Bordetella pertussis – the key to the design of an improved pertussis vaccine. |

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| 09:00 AM - 09:15 AM | **Ricardo da Silva Antunes.** Genome-wide characterization of T cell responses to Bordetella pertussis reveals broad reactivity and defines novel targets for next-generation vaccines |
| 09:15 AM - 09:30 AM | **Yihui Wang.** "Original Antigenic Sin" in Humoral Responses to Acellular Pertussis Vaccination in the Baboon Model |
| 09:30 AM - 09:45 AM | **Hans de Graaf.** Bordetella pertussis colonization can be safely induced in an outpatient setting and induces protective immunity against re-challenge |
| 09:45 AM - 10:00 AM | **May ElSherif.** Establishing a Controlled Human Infection Model of Bordetella pertussis in North America |
| 10:00 AM - 10:15 AM | **Lucia Pawloski.** Establishing a Pertussis Controlled Human Infection Model Biorepository: Providing support for future vaccinology research |
| 10:15 AM - 10:45 AM | Morning Break |

**Pathogenesis and Biology of Bordetellae II**

**Session Chairs: Sandy Armstrong and Camille Locht.**

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| 10:45 AM - 11:15 AM | **Francoise Jacob-Dubuisson.** Copper homeostasis in Bordetella pertussis: how a host-restricted pathogen deals with copper |
| 11:15 AM - 11:30 AM | **Gauthier Roy.** Post-transcriptional regulation by copper with a new upstream Open Reading Frame |
| 11:30 AM - 11:45 AM | **Deborah Hinton.** Characterization of a Bordetella pertussis sRNA whose expression regulates a sigma54 transcriptional regulator, an ABC transporter operon, and the gene for a 3-hydroxyisobutyrate dehydrogenase |
| 11:45 AM - 12:00 PM | **Kristin Surmann.** The impact of BP1092 on Bordetella pertussis virulence factor regulation |
| 12:00 PM - 12:15 PM | **Sherlene Brown.** Discovery and Characterization of a Fic Protein from Bordetella Bronchiseptica with Guanylyltransferase Activity |
| 12:15 PM - 12:30 PM | **Xiujun Li.** Rapid and Accurate Diagnosis of Pertussis on a Point-of-Care Biochip |
| **12:30 PM - 01:00 PM** | **International Bordetella Society Townhall** |
| 1:00 PM - 01:30 PM | Lunch. Boxed lunch to go. |
| 01:30 PM | Free afternoon to network and explore |

## WEDNESDAY JUNE 29th, 2022

## Pathogenesis and Biology of Bordetellae III

**Session Chairs: Maria Rodriguez and Erik Hewlett.**

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| 08:30 AM - 09:00 AM | **Branislav Vecerek.** Adaptation of Bordetella pertussis to intramacrophage environment |
| 09:00 AM - 09:15 AM | **Carlos Baroli.** Bordetella parapertussis adenylate cyclase toxin grants the bacterial invasion of and persistence within respiratory epithelial cells |
| 09:15 AM - 09:30 AM | **Guojun Chen.** Templated Folding of the RTX Domain of the Bacterial Toxin Adenylate Cyclase Revealed by Single Molecule Force Spectroscopy |
| 09:30 AM - 09:45 AM | **Alexa R. Spandrio**. A Juggling ACT: Distinct adenylate cyclase toxin functions during Bordetella persistence in vivo |
| 09:45 AM - 10:00 AM | **Dzifa Amengor.** Antibodies neutralizing the adenylate cyclase toxin synergize with opsonizing antibodies to protect mice against B. pertussis |
| 10:00 AM - 10:30 AM | Morning Break |

## Pertussis Immunity and Vaccinology III

**Session Chairs: Marcela Pasetti and Manish Sadarangani.**

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| 10:30 AM - 11:00 AM | **Bahaa Abu Raya.** Immune responses to vaccination against pertussis in pregnancy in mother-infants dyad. |
| 11:00 AM - 11:30 AM | **Kirsten Maertens.** Maternal vaccination for pertussis. |
| 11:30 AM - 11:45 AM | **Purnima Dubey.** Characterizing the cellular and humoral immune responses to Tdap during pregnancy compared to non-pregnant controls |
| 11:45 AM - 12:00 PM | **Susana Portillo.** Longitudinal analysis of pertussis antibodies in maternal sera and breast milk using a high throughout multiplex MSD assay |
| 12:00 PM - 12:30 PM | Lunch |

## 12:30 PM – 01:15 PM Virtual Poster Session III

The safety of a combined pertussis containing vaccine for pregnant women living with HIV and their infants - a randomized controlled trial in Uganda
**Eve Nakabembe**

Bordetella spp. blocks eosinophil trap formation to suppress eosinophilbactericidal activity
**Connor Roan**

Disruption of btrS-mediated immunomodulation results in enhanced nasal cavity and pulmonary immune responses to Bordetella pertussis.
**Amanda Caulfield**

CyaA delivered by B. pertussis OMVs dampens human neutrophils protective function
**Maria Eugenia Rodriguez**

B cell epitope peptide conjugates as B. pertussis vaccine antigens
**Gage Pyles**

BPZE1 LIVE ATTENUATED INTRANASAL PERTUSSIS VACCINE INDUCES BROAD FUNCTIONAL ANTIBODY RESPONSES
**Peter Goldstein**

Genetic Platform for the Isolation of Constitutive Mutations of the BvgS Sensor Kinase in Bordetella pertussis
**Jordan Pardoe**

The Bordetella T3SS uses multiple strategies to subvert innate and adaptive immunity
**Margaret R. Dedloff**

Bordetella pertussis booster vaccine responses in pregnant women primed with whole-cell vaccine
**Eugenia Zurita**

The impact of Tdap vaccination in successive pregnancies
**Louise De Weerdt**

Identification of novel Bordetella pertussis antigens for next-generation pertussis vaccines
**Nicole Lamond**

MOLECULAR IDENTIFICATION OF BORDETELLA PERTUSSIS AND EXPRESSION OF ANTIGENS
**Georgeta Cristina Oprea**

**01:15 PM – 2:00 PM** **Virtual Poster Session IV**

Genome-based prediction of cross-protective, CD4 T cell-inducing epitope targets as putative vaccine antigens for multiple Bordetella species
**Muktha Natrajan**

Evaluating nasal and muscular acellular pertussis vaccines containing a TLR4 agonist adjuvant
**Megan DeJong**

Characterization of emerging clinical isolates of Bordetella pertussis through omics and murine challenge models
**Graham Bitzer**

Age-dependent deficits in interferon-gamma and natural killer cells contribute to severe Bordetella pertussis in infant mice
**Ashley Mitchell**

MIDDLE EAR INFECTIONS WITH THE BORDETELLAE
**Kalyan Dewan**

Epidemiologic Characteristics and Trends of Bordetella bronchiseptica Identified through Enhanced Pertussis Surveillance, United States, 2011–2020
**Matthew Cole**

A novel and versatile immune assay to evaluate vaccination and infection-induced antibody-mediated recognition of Bordetella pertussis
**Janeri Fröberg**

Analysis of serum bactericidal activity in sera from OPTIMUM: A randomised control trial investigating the timing of pertussis vaccination in pregnancy.
**Rachel Halkerston**

DIGUANYLATE CYCLASE BdcB INHIBITS TYPE THREE SECRETION SYSTEM IN B. BRONCHISEPTICA AND IMPACTS ON IMMUNE RESPONSE
**Keila Belhart**

Heterologous expression of the Bordetella pertussis LgmB membrane protein in Rhodobacter sphaeroides results in high yields suitable for structural and biophysical characterization
**Amita Mahey**

Development of a sensitive transmission model of Bordetella bronchiseptica
**Yang Su**

## Bordetella Genome Analyses

**Session Chairs: Rachel Fernandez and Eric Harvill.**

02:00 PM - 2:15 PM **Eric Harvill.** Ecology and Evolution of the Bordetella species

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| 02:15 PM - 02:30 PM | **Valérie Bouchez.** Genomic library of Bordetella |
| 02:30 PM - 02:45 PM | **Noemie Lefrancq.** Estimating global spatial dynamics and vaccine induced fitness changes of Bordetella pertussis |
| 02:45 PM - 03:00 PM | **Yi Ling Tam.** Building a k-mer based GWAS pipeline to identify genome rearrangement associations in Bordetella pertussis |
| 03:00 PM - 03:15 PM | **Laurence Don Wai Luu.** Genomic dissection of the microevolution of Australian epidemic Bordetella pertussis |
| 03:15 PM - 03:30 PM | **Michael Payne.** A flexible and standardised multilevel genome typing (MGT) scheme for Bordetella pertussis |
| 03:30 PM - 3:45 PM | Afternoon break |

**Pertussis Immunity and Vaccinology IV**

**Session Chairs: Kathy Edwards and Monica Cartelle Gestal.**

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| 03:45 PM - 4:15 PM | **Camille Locht.** Live attenuated pertussis vaccine: on- and off-target effects |
| 04:15 PM - 04:30 PM | **C. Buddy Creech.** Safety and Immunogenicity of Live, Attenuated Intranasal Bordetella pertussis Vaccine (BPZE1) in Healthy Adults |
| 04:30 PM - 04:45 PM | **Stephanie Noviello.** BPZE1, AN INTRANASAL LIVE ATTENUATED PERTUSSIS VACCINE, EVALUATED IN HEALTHY ADULTS: A PHASE 2B, MULTI-CENTER, PLACEBO-CONTROLLED, RANDOMIZED STUDY |
| **06:30 PM - 10:00 PM** | **Banquet at Sage Bistro 6331 Crescent Rd, Vancouver, BC V6T 1Z1** |

**THURSDAY JUNE 30th, 2022**

**Pertussis Immunity and Vaccinology V**

**Session Chairs: Peter Sebo and Daniela Hozbor.**

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| 08:30 AM - 09:00 AM | **F. Heath Damron.** mRNA vaccines for pertussis |
| 09:00 AM - 09:15 AM | **Mohamed Shamseldin.** An unbiased biochemical approach to identify novel CD4+ T cell recognized antigens from B. pertussis |
| 09:15 AM - 09:30 AM | **Caitlín Ní Chasaide.** Vaccine Approaches for Promoting Local Immunity and Memory to Bordetella pertussis in the Nasal Mucosa |
| 09:30 AM - 09:45 AM | **Kelly Weaver.** Characterization of acellular pertussis vaccine-induced memory responses and improvement of responses by use of novel adjuvants |

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| 09:45 AM - 10:00 AM | **Da'Kuawn Johnson.** Effects of Type III IFN Signaling in Neonatal Bordetella Pertussis Infection and Disease |
| 10:00 AM - 10:15 AM | Break |
| 10:15 AM - 10:45 AM | Jennifer Maynard. Using antibodies to define the contributions of B. pertussis virulence factors to protection |
| **10:45 AM - 11:45 AM** | **Roundtable Discussion. Current challenges and future directions** |
| 11:45 AM - 12:00 PM | Lunch. To go lunch. |