



23rd International Pathogenic Neisseria Conference

Boston Park Plaza Hotel, Boston, MA USA | September 24-29, 2023 | ipnc2023.com

Sunday 9/24/2023

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- 4:00 - 6:00pm Registration
6:00 - 8:00pm **Welcome and Networking Reception**

Monday 9/25/2023

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- 7:30-8:30am Registration / Breakfast
8:30-8:45am **Introduction and Welcome**
Caroline Attardo Genco, PhD, Lee M. Wetzler, MD, Paola Massari
8:45-9:30am **Keynote: What COVID-19 Taught Us About Pandemic Preparedness**
Speaker: Nahid Bhadelia, MD, MALD
9:30-10:30am **Host Pathogen Interactions**
9:30-9:45am **Host Pathogen Interactions Talk 1**
Human transferrin and lactoferrin cooperatively support colonization by *Neisseria meningitidis* in the murine nasopharynx - *Isaac Lee (Canada)*
9:45-9:50am **Q&A for Talk 1**
9:50-10:05am **Host Pathogen Interactions Talk 2**
A role for NK cell-derived granzyme B in host defenses against gonorrhoea
Sanjay Ram (United States)
10:05-10:10am **Q&A for Talk 2**
10:10-10:25am **Host Pathogen Interactions Talk 3**
The *Neisseria meningitidis* urethritis clade: characterization of a "chimeric pathogen"
Jennifer Edwards (United States)
10:25-10:30am **Q&A Talk 3**
10:30-11:00am Break
11:00-12:00pm **Host Pathogen Interactions**
11:00-11:15am **Host Pathogen Interactions Talk 4**
The genetic basis of invasive meningococcal disease
Vanessa Sancho Shimizu (United Kingdom)
11:15-11:20am **Q&A for Talk 5**
11:20-11:35am **Host Pathogen Interactions Talk 5**
Deciphering the initial response of endothelial cells to *Neisseria meningitidis* adhesion - *Mathieu Coureuil (France)*
11:35-11:40am **Q&A for Talk 6**
11:40-11:55am **Host Pathogen Interactions Talk 6**
Interferon-epsilon, an estrogen-induced type I interferon, expressed in the female genital tract allows *Neisseria gonorrhoeae* to evade innate immune clearance - *Evelyn Kurt-Jones (USA)*
11:55-12:00pm **Q&A for Talk 6**

- 12:15-1:45pm **Mentoring Lunch** - *sponsored by Ngo Research Society*
Looking for a position? Interested in learning about a diverse career paths? Join our NgoRS sponsored small-group networking event, where aspiring trainees can connect with international representatives from career paths including industry, government, academia, clinical, and public health positions over lunch. **Attendance by RSVP:** <https://forms.gle/sneS6Tzyv7hRfMHV9>
- 2:00-3:40pm **Antimicrobial Resistance**
- 2:00-2:15pm **Antimicrobial Resistance Talk 1**
Cell division principles and mechanisms of ceftriaxone resistance in *Neisseria gonorrhoeae* - *Aditya Bandekar (USA)*
- 2:15-2:20pm **Q&A for Talk 1**
- 2:20-2:35pm **Antimicrobial Resistance Talk 2**
Prevalence of reduced susceptibility to 3rd generation cephalosporins in *Neisseria meningitidis* in the United States from 2017 to 2021 - *Sandip Shrestha (USA)*
- 2:35-2:40pm **Q&A for Talk 2**
- 2:40-2:55pm **Antimicrobial Resistance Talk 3**
An extremely narrow range antibiotic with a new mode of action against *Neisseria gonorrhoeae* - *Nicolas Biais (France)*
- 2:55-3:00pm **Q&A for Talk 3**
- 3:00-3:15pm **Antimicrobial Resistance Talk 4**
Multi-drug resistance in commensal *Neisseria* isolates in Shanghai, China during 2013-2019 - *Mingliang Chen (China)*
- 3:15-3:20pm **Q&A for Talk 4**
- 3:20-3:35pm **Antimicrobial Resistance Talk 5**
Mutations in the β 3- β 4 loop of penicillin-binding protein 2 from cephalosporin-resistant *Neisseria gonorrhoeae* hinder cephalosporin acylation via restriction of protein dynamics - *Christopher Davies (USA)*
- 3:35-3:40pm **Q&A for Talk 5**
- 3:40-4:00pm Break
- 4:00-5:01pm **Short Poster Talks Session 1**
- 4:00-4:05pm **The Global Population Structure of *Neisseria meningitidis*** - *Neil MacAlasdair (USA)*
- 4:08-4:13pm **Genomic analyses of African *Neisseria gonorrhoeae* isolates: identification of lineages distinct from the rest of the world** - *Odile Harrison (UK)*
- 4:16-4:21pm **Continuing genomic evolution of the urethritis-associated lineage 11.2 meningococcal clade NmUC** - *Emilio Rodriguez (USA)*
- 4:24-4:29pm ***Neisseria gonorrhoeae* Mutant Library** - *Hannah Landstrom (USA)*
- 4:32-4:37pm **Impact of filamentous bacteriophage on *Neisseria gonorrhoeae* biology**
Jessica Kopew (USA)
- 4:40-4:45pm ***Neisseria gonorrhoeae* infection in the context of health - and bacterial vaginosis-associated microbiota communities in the lower female reproductive tract**
Katherine Rhodes (USA)
- 4:48-4:53pm **A zinc regulated metalloprotein Ngo1049 contributes to metal homeostasis in *Neisseria gonorrhoeae*** - *Ian Liyayi (USA)*
- 4:56-5:01pm **Structure-function analysis of the gonococcal TonB-dependent transporter, HpuB**
Olivia Awate (USA)

5:05-6:30pm **Poster Session 1 / Happy Hour**
 1. Therapeutics/Antimicrobial Resistance/Diagnostics
 2. Responses to Infection
 3. Epidemiology/Clinical Disease

Evening On Your Own

Tuesday 9/26/2023

8:00-8:30am	Registration / Breakfast
8:25am	Introduction of Keynote - <i>Yonatan H. Grad, MD, PhD</i>
8:30-9:15am	Keynote - The Landscape of Clinical Trials of Vaccines to Prevent Gonococcal Infection <i>Jodie A. Dionne, MD, MSPH, FIDSA</i>
9:15-10:15am	Vaccines
9:15-9:30am	Vaccines Talk 1 Cross reactive responses against <i>Neisseria gonorrhoeae</i> in high-risk individuals immunised by Bexsero - <i>Jeremy Derrick (UK)</i>
9:30-9:35am	Q&A for Talk 1
9:35-9:50am	Vaccines Talk 2 MenB-4C vaccination elicited IgG antibodies recognize meningococcal and cross react with gonococcal lipooligosaccharides (LOS) - <i>Yih-Ling Tzeng (United States)</i>
9:50-9:55am	Q&A for Talk 2
9:55-10:10am	Vaccines Talk 3 Characterisation of 4CMenB vaccine-induced antibodies to <i>Neisseria gonorrhoeae</i> <i>Kate Seib (Australia)</i>
10:10-10:15am	Q&A for Talk 3
10:15-10:45am	Break
10:45-12:05pm	Vaccines
10:45-11:00am	Vaccines Talk 4 Protection against <i>N. gonorrhoeae</i> induced by OMV-based Meningococcal Vaccines are associated with cross-species directed humoral and cellular immune responses - <i>Weiyang Zhu (United States)</i>
11:00-11:05am	Q&A for Talk 4
11:05-11:20am	Vaccines Talk 5 Analysis of human monoclonal antibodies from 4CMenB vaccinees reveals PorB epitopes inducing cross-strain protection - <i>Isabel Delany (Italy)</i>
11:20-11:25am	Q&A for Talk 5
11:25-11:40am	Vaccines Talk 6 Modifying <i>Neisseria gonorrhoeae</i> OMVs to promote immune responses <i>Rebekah Jones (United Kingdom)</i>
11:40-11:45am	Q&A for Talk 6
11:45-12:00pm	Vaccines Talk 7 Preclinical Evidence for protective potential of a GMMA-based vaccine against gonococcus - <i>Erika Bartolini (Italy)</i>
12:00-12:05pm	Q&A Talk 7

- 12:15-2:15pm **Meningococcal Meningitis in the African Meningitis Belt: Surveillance, Outbreaks, and Future Preparedness** (sponsored by the Bill & Melinda Gates Foundation)
 Join us for a lunch-time symposium focused on the burden of meningococcal meningitis in the African meningitis belt. Here we will learn more about the evolving epidemiology of meningococcal meningitis in the belt, a case study to delivery strategies of new meningococcal meningitis conjugate vaccines, and integration of efforts into the World Health Organization's Defeating Meningitis 2030 platform and the Bill & Melinda Gates Foundation's Meningococcal Meningitis Portfolio.
 Co-Chairs: Drs. Keith Klugman (Direction, Pneumonia and Pandemic Preparedness, Bill & Melinda Gate Foundation) and Brenda Kwambana-Adams (Liverpool School of Tropical Medicine and Malawi-Liverpool-Wellcome Clinical Research Programme)
- 2:30-3:10pm **Vaccines**
- 2:30-2:45pm Vaccines Talk 8**
 Development of a pentavalent meningococcal conjugate vaccine, NmCV-5 (ACWYX) – *Prasad Kulkarni and Dhananjay Kapse (USA)*
- 2:45-2:50pm **Q&A for Talk 8**
- 2:50-3:05pm **Vaccines Talk 9**
 The target of a patient-derived fully-human monoclonal antibody is a novel cross-protective antigen - *Millie Gladstone (United Kingdom)*
- 3:05-3:10pm **Q&A for Talk 9**
- 3:10-3:30pm Break
- 3:30-4:23pm **Short Poster Talks Session 2**
- 3:30-3:35pm **Interactive Visual Exploration of Neisseria Meningitidis** - *Keith Jolley (UK)*
- 3:38-3:43pm **B Part of it NT study: Immunisation for adolescents against two serious communicable diseases with one vaccine** - *Helen Marshall (Australia)*
- 3:46-3:51pm **Optimisation of a meningococcal protein antigen microarray for evaluation of minor OMV vaccine antigen components** - *Fidel Ramirez Bencomo (UK)*
- 3:54-3:59pm **Utility of targeting the bacterial transferrin receptor for a gonococcal vaccine**
Jamie Fegan (Canada)
- 4:02-4:07pm **Immunogenicity of Extracellular Loop Hybrid Antigens of the Gonococcal Zinc Importers TdfJ and TdfH** - *Julie Stoudenmire (USA)*
- 4:10-4:15pm **Coordinated evolution of glycan structure, oligosaccharyltransferase protein targeting specificity and Tfp pilin subunit glycosylation within the genus Neisseria** - *Chris Hadjineophytou (Norway)*
- 4:18-4:23pm **Development of a multicellular in vitro model of the meningeal blood-CSF barrier to study Neisseria meningitidis infection**
Alexandra Schubert-Unkmeir (Germany)
- 4:30-6:00pm **Poster Session 2 / Happy Hour**
1. Vaccines
2. Bacterial Physiology, Genomics and Responses
- 6:00-8:00pm **On Your Own**
- 8:00-9:30pm **Join colleagues for one of our optional workshops.** Space is limited and an RSVP is required. Drinks and Dessert will be served.
Attendance by RSVP: https://bostonu.qualtrics.com/jfe/form/SV_8i7CVajXr1OnSAK
- 1. Platforms for Neisseria genomics and N. gonorrhoeae nomenclature**
2. Developing standardized approaches to evaluate gonococcal vaccines and antimicrobials

Wednesday 9/27/2023

8:00-9:00am	Registration / Breakfast
9:00-10:30am	Boston Biotech Community Panel - From Idea to Industry
9:00-9:45am	Panel One - Translating from Lab to Product
9:45-10:30am	Panel Two - Academic Industry Collaborations – People Exchange
10:30-11:00am	Break
11:00-12:40pm	Therapeutics
11:00-11:15am	Therapeutics Talk 1 Novel EptA inhibitors increase the susceptibility of <i>Neisseria gonorrhoeae</i> to killing by innate immune defenses - <i>Charlene Kahler (Australia)</i>
11:15-11:20am	Q&A for Talk 1
11:20-11:35am	Therapeutics Talk 2 Combatting antibiotic resistance in <i>Neisseria gonorrhoeae</i> by targeting the final enzyme in cysteine biosynthesis, <i>CysK</i> - <i>Jack McGarvie (New Zealand)</i>
11:35-11:40am	Q&A for Talk 2
11:40-11:55am	Therapeutics Talk 3 Discovery of novel compounds to combat multi-drug resistant gonorrhoea <i>Evgeny Semchenko (Australia)</i>
11:55-12:00pm	Q&A for Talk 3
12:00-12:15pm	Therapeutics Talk 4 Development of a humanized monoclonal antibody against <i>Neisseria gonorrhoeae</i> <i>Jutamas Shaughnessy (USA)</i>
12:15-12:20pm	Q&A for Talk 4
12:20-12:35pm	Therapeutics Talk 5 Structure of anti-gonococcal lipooligosaccharide antibody bound to mimetic peptide vaccine informs therapeutic and vaccine strategies - <i>Peter Beernink (USA)</i>
12:35-12:40pm	Q&A for Talk 5
12:40pm	Lunch On your Own/Time to Explore Boston - See Conference Sponsored Activities

Thursday 9/28/2023

8:00-9:00am	Registration / Breakfast
8:55am	Introduction of Keynote - <i>Dominique A. Caugant, PhD</i>
9:00-9:45am	Keynote - On the Cusp of a World Without Epidemic Meningitis - <i>Marie-Pierre Preziosi, MD, PhD</i>
9:45-10:25am	Genomics
9:45-10:00am	Genomics Talk 1 Characterization of recombination events among co-circulating populations of <i>Neisseria gonorrhoeae</i> and <i>Neisseria meningitidis</i> in the U.S <i>Sandeep Joseph (USA)</i>
10:00-10:05am	Q&A for Talk 1
10:05-10:20am	Genomics Talk 2 Transcriptome-guided metabolic network analysis reveals rearrangements of carbon flux distribution in <i>Neisseria gonorrhoeae</i> during neutrophil co-culture <i>Aimee Potter (USA)</i>

	10:20-10:25am	Q&A for Talk 2
10:25-10:55am	Break	
10:55-11:35am	Genomics	
	10:55-11:10am	Genomics Talk 3 Metatranscriptomic Analysis Identifies Sex Specific Coordinated Processes Between the Host Environment and Neisseria gonorrhoeae During Mucosal Infection <i>Ryan McClure (United States)</i>
	11:10-11:15am	Q&A for Talk 3
	11:15-11:30am	Genomics Talk 4 CRISPR RNA regulates apoCas9 mediated viral memorization in meningococci <i>Yan Zhang (USA)</i>
	11:30-11:35am	Q&A for Talk 4
11:50 - 1:45pm	Meningococcal Disease, Forgotten But Not Gone Lunch Symposium - <i>Sponsored by Sanofi</i> This workshop will focus on educating attendees about current epidemiology and other key issues around invasive meningococcal disease and its prevention, including information about recent outbreaks in the US and abroad, within the context of meningococcal vaccine development over the past 45 years. Distinguished speakers Dr. Tina Tan and Dr. Steve Pelton will present relevant data and lead a discussion about current issues in disease prevention through immunization. This discussion will include a presentation by Dr. Katherine Galarza focused on new and pivotal data from recent meningococcal vaccine studies. The learning objective for this workshop is to raise the awareness of IPNC attendees about meningococcal vaccines, recent epidemiologic data, and the importance of vaccination against meningococcal disease in a changing landscape.	
2:00-3:40pm	Bacterial Pathogenesis	
	2:00-2:15pm	Bacterial Pathogenesis Talk 1 Discovery of a novel widespread family of Specific Single-Stranded Nucleases (Ssn) involved in the virulence and natural competence of N. meningitidis <i>Martin Chenal (Canada)</i>
	2:15-2:20pm	Q&A for Talk 1
	2:20-2:35pm	Bacterial Pathogenesis Talk 2 Methionine Sulfoxide Reductase (MsrA/B) of Pathogenic Neisseria Moonlights as a Complement Component 5a Binding Protein - <i>Michael Jennings (Australia)</i>
	2:35-2:40pm	Q&A for Talk 2
	2:40-2:55pm	Bacterial Pathogenesis Talk 3 Evolution to serum resistance through phase variable opa genes - <i>Lisa Frielinghaus (USA)</i>
	2:55-3:00pm	Q&A for Talk 3
	3:00-3:15pm	Bacterial Pathogenesis Talk 4 Investigating the role of lipooligosaccharide sialylation in Neisseria gonorrhoeae-neutrophil interactions - <i>Amaris Cardenas</i>
	3:15-3:20pm	Q&A for Talk 4
	3:20-3:35pm	Bacterial Pathogenesis Talk 5 Identifying factors important for the survival of Neisseria gonorrhoeae in the presence of neutrophils - <i>Vera Kozjak-Pavlovic (Germany)</i>
	3:35-3:40pm	Q&A for Talk 5
7:00-12:00am	Conference Banquet Dinner (State Room, Boston, MA)	

Friday 9/29/2023

8:00-8:55am	Registration / Breakfast
8:55am	Introduction of Keynote - <i>Odile B. Harrison, PhD</i>
9:00-9:45am	Keynote - 25 years of MLST - <i>Martin C.J. Maiden, PhD, FRCPath, FMedSci</i>
9:45-10:45am	Epidemiology and Clinical Disease
9:45-10:00am	Epidemiology and Clinical Disease Talk 1 Bacterial Meningitis Epidemiology in Burkina Faso and Niger - High-Risk Countries in the Meningitis Belt of Sub-Saharan Africa, 2016-2021 - <i>Veronica Pinell-McNamara (USA)</i>
10:00-10:05am	Q&A for Talk 1
10:05-10:20am	Epidemiology and Clinical Disease Talk 2 Risk factors for infection with antimicrobial resistant <i>Neisseria gonorrhoeae</i> in men with gonococcal urethritis in Nanjing, <i>China</i> - <i>Xiaohong Su (China)</i>
10:20-10:25am	Q&A for Talk 2
10:25-10:40am	Epidemiology and Clinical Disease Talk 3 The epidemiology of invasive meningococcal disease after the withdrawal of COVID-19 control measures in England - <i>Helen Campbell (UK)</i>
10:40-10:45am	Q&A for Talk 3
10:45-11:00am	Break
11:00-12:20pm	Epidemiology and Clinical Disease
11:00-11:15am	Epidemiology and Clinical Disease Talk 4 Invasive meningococcal disease trends, South Africa, 2018-2022 – <i>Mignon du Plessis (South Africa)</i>
11:15-11:20am	Q&A for Talk 4
11:20-11:35am	Epidemiology and Clinical Disease Talk 5 A microbiological and clinical review of meningococcal eye infections in England: 2010-2022. <i>Stephen Clark (UK)</i>
11:35-11:40am	Q&A for Talk 5
11:40-11:55am	Epidemiology and Clinical Disease Talk 6 Comparison of Disease and Carriage Meningococcal Isolates in the UK in 2018 - <i>Jeremy Carr (UK)</i>
11:55-12:00pm	Q&A for Talk 6
12:00-12:15pm	Epidemiology and Clinical Disease Talk 7 Longitudinal Meningococcal Carriage in Adolescents and Young adults in South Australia 2017-2020 <i>Helen Marshall (Australia)</i>
12:15-12:20pm	Q&A for Talk 7
12:20pm	Meeting Wrap Up and Announcement of next IPNC Meeting
12:35pm	Meeting Adjourns