

SPHINx19 conference

Day 1: Monday, June 24

Participants registration and Welcome Coffee (9-9:30)

9.30-9.45 – Welcome speech

Session 1: Models to better understand pathogen spread dynamics within healthcare settings (9.45 – 12)

Chair: Lulla Opatowski

- **Theo Kypraios (University of Nottingham, UK)** – Modelling, Bayesian inference and model assessment for nosocomial pathogens using whole-genome-sequence data.
- **Thi Mui Pham (UMC Utrecht, Netherlands)** – Tracking *P. aeruginosa* transmission routes in intensive-care units using mathematical models.
- **Mélanie Bonneau (UVSQ, France)** – Transmission routes of multi-resistant Enterobacteriaceae in hospitalized neonates in Madagascar.
- **Finlay Campbell (Imperial College London, UK)** – Reconstructing nosocomial outbreaks using whole genome sequences and patient ward data.
- **Hannan Tahir (UMC Utrecht, Netherlands)** – Role of intra-hospital patient movements network in pathogen spread inside a hospital.
- **Audrey Duval (UVSQ, France)** – Close proximity interactions support transmission of ESBL-K. *pneumoniae* but not ESBL-E. *coli* in healthcare settings.

Lunch (12 – 13.30)

Session 2: Models to assess infection control strategies within healthcare settings (13.30 – 17.30)

Chair: Laura Temime

- **Robert Beardmore (University of Exeter, UK)** – Modelling antibiotic resistance in clinical settings.
- **David Smith (UVSQ, France)** – Multispecies interactions as drivers of antimicrobial resistance dynamics.
- **Diane Pople (Public Health England, UK)** – A mathematical model of carbapenemase-producing Enterobacteriaceae transmission and control in the English hospital setting.
- **Cristina Lanzas (North Carolina State University, USA)** – Antibiotic stewardship in healthcare settings: data mining and modeling.

Coffee Break

- **Ben Cooper (Mahidol University, Thailand)** – Model-based analysis of within- and between-host dynamics of multidrug-resistant Enterobacteriaceae in hospital settings to inform antibiotic stewardship interventions.
- **Lulla Opatowski (UVSQ, France)** – Is it worth it? A dynamic cost-effectiveness modelling study of in-hospital control strategies for vancomycin-resistant enterococci.
- **Martin Lopez-Garcia (University of Leeds, UK)** – A multi-compartment SIS stochastic model with zonal ventilation for the spread of nosocomial infections: detection, outbreak management and infection control.
- **Sean Barnes (University of Maryland, USA)** – Evaluating a Prediction-Driven Targeting Strategy for Reducing the Transmission of Multidrug-Resistant Organisms.

Day 2: Tuesday, June 25

Welcome Coffee (9-9:30)

Session 3: Models accounting for inter-individual contact networks within healthcare settings (9.30 – 11.30)

Chair: Pascal Crépey

- **Philippe Vanhems (Hospices Civils de Lyon, France)** – Hospital acquired influenza: description of inter-individual contacts with RFID technology and opportunities of transmission.
- **Francesco Pinotti (Sorbonne university, France)** – Host contact dynamics shapes richness and dominance of pathogen strains.
- **Audrey Duval (UVSQ, France)** – An agent-based framework to simulate pathogen transmission along inter-individual contact networks within hospitals.
- **Eugenio Valdano (UCLA, USA)** – Reorganization of nurse scheduling reduces the risk for nosocomial infections
- **Jeffrey Shaman (Columbia university, USA)** – Inference and control of the nosocomial transmission of methicillin-resistant *Staphylococcus aureus*.

Lunch and poster session (11.30 – 13.30)

Session 4: Models accounting for patient transfer networks between healthcare settings (13.30 – 15.30)

Chair: Vittoria Colizza

- **Tjibbe Donker (RIVM, Netherlands)** – Using hospital networks to improve surveillance and control of antimicrobial resistance.
- **Narimane Nekkab (Institut Pasteur, France)** – Assessing the role of inter-facility patient transfer in the spread of carbapenemase-producing Enterobacteriaceae: the case of France between 2012 and 2015
- **Pascal Crépey (EHESP, France)** – Modeling the spread of multi-resistant pathogens through patient transfers in France using a hospital-based network model.
- **Hanjue Xia (Martin-Luther University, Germany)** – Assessing effects of incomplete networks data in the context of inter-hospital transmission dynamics.
- **Bruce Lee (Johns Hopkins university, USA)** – Modeling the Spread and Control of Antibiotic-Resistant Bacteria in Orange Country, CA, and the Chicago Metropolitan Area

Roundtable (15.30 – 16.45)

Models for decision making: confronting points of views.

16.45-17.00 – Closing remarks

Closing cocktail