



**23rd International *Burkholderia cepacia*
Working Group meeting**



14th - 17th May, 2024
Pavia, Italy



**University of
Zurich^{UZH}**



Dear colleague,

Together with the co-organizers Kirsty Agnoli, Leo Eberl, Marco Fondi, Stefano Gualdi, Elena Perrin and Viola Scoffone it is a privilege to welcome you to the 23rd International *Burkholderia cepacia* working group meeting in Pavia. In particular, this year the conference will provide us with the opportunity to meet in person to update and discuss our research on *Burkholderia*. We will also have time on the last day to discuss the future of the group.

As usual, we left some time for social activities which include a visit to the Camillo Golgi Museum, free time to visit Pavia, and the social dinner in a typical restaurant.

I hope you enjoy your stay. Please don't hesitate to ask should you need anything during the meeting.

I am really looking forward to seeing you all.

Benvenuti a Pavia!

On behalf of the Organising Committee,

A handwritten signature in black ink, appearing to read 'Silvia' with a stylized flourish at the end.

Silvia

Organisation

Chair: Silvia Buroni

Organising Committee

Marco Fondi, Leo Eberl, Viola Scoffone, Elena Perrin, Kirsty Agnoli, Stefano Gualdi

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Programme

Tuesday, 14th May 2024

- 17:00-18:00 **Registration and Welcome**
- 18:00 – 18:45** **Plenary Lecture: “Adaptation of Bcc over time of colonisation - the story so far”.**
Prof. Siobhán McClean, University College Dublin
- 19:00** **Apero at Minerva Pavia Bistro (Corso Camillo Benso Cavour, 64)**

Wednesday, 15th May 2024

- 8:45-9:15 Registration
- 9:15-9:30 Introduction by Silvia Buroni
- 9:30-10:20** **Session 1: Novel therapeutics**
Session Chairs: Kirsty Agnoli & Stefano Gualdi
- 9:30-09:55 1.1: Samuele Irudal
Different approaches to fight *Burkholderia cenocepacia* complex infections.
- 09:55-10:20 1.2: Laura Belvisi
From fragments to covalent glycomimetic ligands: targeting *B. cenocepacia*'s lectin BC2L-C.
- 10:20-10:50** **Coffee Break**
- 10:50-12:30** **Session 2: Physiology and secondary metabolism**
Session Chairs: Silvia Buroni
- 10:50-11:15 2.1: Inês Tavares
The role of membrane vesicles for the release of bioactive compounds in *B. cenocepacia* K56-2.
- 11:15-11:40 2.2: Zhong Ling Yap
Identifying bioplastic degradation abilities and associated genes in *Burkholderia* using synthetic biology tools.
- 11:40-12:05 2.3: Zaira Heredia-Ponce
Bacteriophage-dependent host cell lysis leads to biofilm streamer formation in *Burkholderia cenocepacia* H111.
- 12:05-12:30 2.4: Kirsty Agnoli
Uncovering the basis of pathogenicity within the *Burkholderia sensu lato*.
- 12:30-14:00** **Lunch**
- 14:00-15:15** **Session 3: Signalling and regulation**
Session Chairs: Elena Perrin & Stefano Gualdi
- 14:00-14:25 3.1: María Rodríguez García
The Expanding Diazenium Diolate Signal Family.

- 14:25-14:50 3.2: Pauline Coulon
Quorum sensing and DNA methylation play an active role in clinical *Burkholderia* phase variation.
- 14:50-15:15 3.3: Marco Fondi
Additional control over quorum sensing regulation buffers noise in *Burkholderia* growth dynamics.
- 15:15-15:45 Coffee Break**
- 15:45-17:00 Session 4: Medical Microbiology**
Session Chairs: Marco Fondi & Viola Scoffone
- 15:45-16:10 4.1: Hugo Cruz Ramos
Evaluation of CHROMagar™ B.cepacia: a novel chromogenic medium to detect Bcc from cosmetic, pharmaceutical and respiratory samples.
- 16:10-16:35 4.2: Alessandra Bragonzi
Preclinical mouse models for assessing drug efficacy in respiratory bacterial infection and inflammation.
- 16:35-17:00 4.3: Amal Amer
Burkholderia cenocepacia infection in the era of CFTR modulators.

Thursday, 16th May 2024

- 9:00-09:45 **Plenary Lecture: “*Burkholderia cepacia* complex: switching between Dr Jekyll and Mr. Hyde”.**
Prof. Silvia Cardona, University of Manitoba
- 09:45-10:35 Session 5: Adaptation to the host environment**
Session Chairs: Marta Torres & Zaira Heredia
- 09:45-10:10 5.1: Marta Torres
Disentangling animal and plant host colonization by *Burkholderia* and *Paraburkholderia* species
- 10:10-10:35 5.2: Gregory Priebe
Insights from bacterial genomics: Exploring transmission and pathogenicity in a cystic fibrosis outbreak of *Burkholderia dolosa* over more than two decades.
- 10:35-11:05 Coffee Break**
- 10:35-12:35 Session 5 continued: Adaptation to the host environment**
Session Chairs: Marta Torres & Zaira Heredia
- 11:05-11:30 5.3: Ciarán Carey
Investigating the Role of Hypoxia in Chronic Infection Through Proteomic Profiling.
- 11:30-12:05 5.4: Lauren Pugsley
Pathogenesis and antimicrobial sensitivity of *Burkholderia cenocepacia* at acidic pH.

- 12:05-12:35 5.5: Stefano Gualdi
Unravelling *Burkholderia cenocepacia* H111 host colonization factors using two animal models.
- 12:35-14:00 Lunch**
- 14:00-15:30 **Visit to Museo Camillo Golgi of the University of Pavia (guided tour)**
<http://museocamillogolgi.unipv.eu/>
- 19:30 Meet at “Ponte Coperto” (see Pavia city map)
- 20:00 Social dinner at “Antica Trattoria Ferrari” Via dei Mille, 111.

Friday, 17th May 2024

- 09:00-10:15 Session 6: Antibiotic resistance mechanisms**
Session Chairs: Leo Eberl
- 09:00-09:25 6.1: Elena Perrin
Role of the *yajC-secDF* operon in *Burkholderia*.
- 09:25-09:50 6.2: Miguel Valvano
Membrane detox: uncovering two *Burkholderia* proteins representing a conserved system that protects bacteria from membrane lipid peroxidation injury.
- 09.50-10:15 6.3: Sarah Osmulski
Evolution of bleach and antibiotic resistance during a *Burkholderia contaminans* outbreak associated with contaminated stool softener.
- 10:15-10:45 Coffee Break**
- 10:45-11:35 Session 6 continued: Antibiotic resistance mechanisms**
Session Chairs: Leo Eberl
- 10:45-11:10 6.4: Maria Mojica
Frameshift mutations in genes encoding PBP3 and PBP4 trigger an unusual, extreme β -lactam resistance phenotype in *Burkholderia multivorans*.
- 11:10-11:35 6.5: Neha Garg
Application of Paired Metabolomics and Genomics Approach for Mechanistic Investigation of Antibiotic Response and Antibiotic Mediated Microbial Interactions.
- 11:35-12:45 **Open discussion session: What’s Next for the IBCWG?**