



BACT 2022 program

Day 1 – Sunday April 24, 2022

- 14h00 – 17h00 Registration
- 17h00 – 17h15 Welcome address
- 17h15 – 17h30 Opening remarks
- 17h30 – 18h30 **Keynote address**
Shaping the bacterial cell wall: actin-like MreB proteins, from single molecules to cell morphogenesis
CARBALLIDO-LÓPEZ Rut
Micalis Institute, INRAE, AgroParisTech, Université Paris-Saclay, Jouy-en-Josas, France

Welcome cocktail 19h00 – Espace Zodiaque

Day 2 – Monday April 25, 2022

- Session 1 Spores and sporulation (1)**
GOHAR Michel (INRAE Jouy-en-Josas, France) - GOOSSENS Pierre (Institut Pasteur Paris, France)
- 09h00 – 09h20 **1** Characterization of a novel type of extremely resilient pilli expressed on *Bacillus cereus* endospores
ALSPHOM Marina
Department of Physics, Umeå University and Umeå Centre for Microbial Research, Umeå, Sweden
 - 09h20 – 9h40 **2** Unveiling the biomechanical properties of *Bacillus cereus* endospore adhesion pilli using optical tweezers
ANDERSSON Magnus
Department of Physics, Umeå University and Umeå Centre for Microbial Research, Umeå, Sweden
 - 09h40 – 10h00 **3** Hanks kinase-dependent phosphorylation of SpoIIAB, a key factor in the control of the forespore-specific transcription factor sigma^W, affects differentiation of *Bacillus thuringiensis*
POINCT Sandrine
Université Paris-Saclay, INRAE, AgroParisTech, Micalis Institute, Jouy-en-Josas, France, Present address : INRAE, Avignon Université, UMR SQPOV, Avignon, France
 - 10h00 – 10h20 **4** An intestinal isolated strain of *Bacillus cereus* produces unusual curved spores at high temperatures of growth and sporulation
VITTORIA Maria
Department of Biology, Federico II University, Naples, Italy

Coffee break

- 10h50 – 11h10 **5** Characterizing *Bacillus weihenstephanensis* spore physiological stage during germination and outgrowth in the presence of free fatty acids
COROLLER Louis
Univ Brest, INRAE, Laboratoire Universitaire de Biodiversité et Écologie Microbienne, UMT ACTIA Alter'IX, Quimper, France
- Session 2 Epidemiology (1)**
BHATNAGAR Rakesh (Amity University Rajasthan, India) - KLEE Silke (Robert Koch Institute, Berlin, Germany)
- 11h10 – 11h30 **6** Taxonomic assignment of *Bacillus cereus biovar anthracis* – “There and back again”
KLEE Silke
Robert Koch Institute, Centre for Biological Threats and Special Pathogens (ZBS 2: Highly Pathogenic Microorganisms), Berlin, Germany
 - 11h30 – 11h50 **7** Assessing *Bacillus anthracis* transmission at the One Health interface using novel sequencing approaches
FORDE Taya
University of Glasgow, Glasgow, United Kingdom
 - 11h50 – 12h10 **8** Insights into genomic variation of closely related *Bacillus anthracis* isolates belonging to lineage 3.2 using short- and long-read sequencing
MEDVECKY Matej
University of Glasgow, Glasgow, United Kingdom, University of Hradec Kralove, Hradec Kralove, Czech Republic

Lunch break

- Session 3 Epidemiology (2)**
BHATNAGAR Rakesh (Amity University Rajasthan, India) - KLEE Silke (Robert Koch Institute, Berlin, Germany)
- 14h00 – 14h20 **9** Environmental variation and host behaviors alter spatiotemporal patterns of anthrax outbreaks contrasting two African savannas
TURNER Wendy
U.S. Geological Survey, Wisconsin Cooperative Wildlife Research Unit, Department of Forest and Wildlife Ecology, University of Wisconsin – Madison, USA
 - 14h20 – 14h40 **10** Confirmation of viable, virulent *Bacillus anthracis* from biting flies feeding on a deer during an anthrax epizootic in Texas, 2019
BLACKBURN Jason
Spatial Epidemiology & Ecology Research Laboratory, Department of Geography, University of Florida, Gainesville, Florida and Emerging Pathogens Institute, University of Florida, Gainesville, Florida, USA

Session 4 Toxins and therapies (1)
BLANKE Steven (University of Illinois, USA) – TOURNIER Jean-Nicolas (IRBA, France)

- 14h40 – 15h00 **11** Disk diffusion antibiotic susceptibility testing of *Bacillus anthracis* strains isolated from anthrax outbreaks in Italy
MANZULLI Viviana
Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Anthrax Reference Institute of Italy, Foggia, Italy
- 15h00 – 15h20 **12** Severe Pneumonia Caused by Infection with a *Bacillus tropicus* expressing Anthrax Toxins and Treatment with a Monoclonal Anthrax Antitoxin
BOWER William
Bacterial Special Pathogens Branch, Centers for Disease Control and Prevention, Atlanta, GA USA
- 15h20 – 15h40 **13** A Novel Method for Fast Identification and Antimicrobial Susceptibility Determination of *Bacillus anthracis*
REES Jon
Clinical Chemistry Branch, Division of Laboratory Sciences, Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Coffee break

15h40 – 18h00
Poster Session 1

Day 3 – Tuesday April 26, 2022

Session 5 Envelope (1)
ALSPHOM Marina (Umeå University, Sweden) – GILLIS Annika (UCLouvain, Belgium)

- 09h00 – 09h20 **14** Implication of the S-layer in surface properties of *Bacillus cereus* AH187
BOUTONNET Cécile
Avignon Université, INRAE, UMR SQPOV Sécurité et Qualité des Produits d'Origine Végétale, Avignon, France
- 09h20 – 09h40 **15** Early expression of capsule during *Bacillus anthracis* germination
GOOSSENS Pierre
Institut Pasteur, Yersinia Unit, Paris, France
- 09h40 – 10h00 **16** The *Bacillus anthracis* S-layer is an exoskeleton-like structure that imparts mechanical and osmotic stabilization to the cell wall
FIORAVANTI Antonella
Structural and Molecular Microbiology, Structural Biology Research Center, VIB, Brussels and Structural Biology Brussels, Vrije Universiteit Brussel, Brussels, Belgium
- 10h00 – 10h20 **17** A metastable cell chaining morphotype associated with phenotypic switching in *Bacillus cereus* ATCC 14579
ØKSTAD Ole-Andreas
Department of Pharmacy, University of Oslo, Norway

Coffee break

Session 6 Regulation
KOLSTØ Anne-Brit (University of Oslo, Norway) – MAHILLON Jacques (UCLouvain, Belgium)

- 10h50 – 11h10 **18** ABC of CesCD: A bifunctional ABC transporter directing cereulide synthesis in emetic *Bacillus cereus*
EHLING-SCHULZ Monika
Vetmeduni Vienna, Institute of Microbiology, Vienna, Austria
- 11h10 – 11h30 **19** The transcription factor CprR controls a cell differentiation system in *Bacillus thuringiensis* by regulating a *spoDE* family gene
ZHANG Rubin
State Key Laboratory for Biology of Plant Diseases and Insect Pests, Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing, China
- 11h30 – 11h50 **20** Structural and functional analysis of toxin and small RNA gene promoter regions in *Bacillus anthracis*
POMERANTSEV Andrei
Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD, USA
- 11h50 – 12h10 **21** Regulation of the expression of *vip3A*, a *Bacillus thuringiensis* insecticidal toxin gene
VERPLAETSE Emilie
Micalis Institute, INRAE, AgroParisTech, Université Paris-Saclay, Jouy-en-Josas, France

Lunch Break

Session 7 Host-Pathogen interactions (1)
EHLING-SCHULZ Monika (Vetmeduni Vienna, Austria) – NIELSEN-LEROUX Christina (INRAE Jouy-en-Josas, France)

- 14h00 – 14h20 **22** Differences in toxin levels, hematological parameters, and pathology provide insights into the variations of inhalation anthrax progression and outcome
BOYER Anne
Clinical Chemistry Branch, Division of Laboratory Sciences, Centers for Disease Control and Prevention, Atlanta, Georgia, USA
- 14h20 – 14h40 **23** In vivo nanoscale analysis of the dynamic synergistic interaction of *Bacillus thuringiensis* Cry1Aa and Cyt1Aa toxins in *Aedes aegypti*
BRAVO Alejandro
Departamento de Microbiología Molecular, Instituto de Biotecnología, Universidad Nacional Autónoma de México (UNAM). Cuernavaca, Morelos, Mexico
- 14h40 – 15h00 **24** Kinetics of Early Inflammatory Response to toxinogenic *Bacillus anthracis* after Intradermal Infection in Mice
CHUA Jennifer
United States Army Medical Research Institute of Infectious Diseases, Frederick, Maryland, USA
- 15h00 – 15h20 **25** Inhalational anthrax causes transient cardiac injury but does not lead to permanent cardiac disease in an experimental model
WRIGHT Mary
Division of Clinical Research, National Institute of Allergy and Infectious Diseases, Bethesda, Maryland, USA
- 15h20 – 15h40 **26** Macrophocytosis is the Preferred Epithelial Internalization Pathway for *B. anthracis*
METCALF Jordan
Departments of Internal Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma, USA

Coffee break

Session 8 Envelope (2)
ALSPHOM Marina (Umeå University, Sweden) – GILLIS Annika (UCLouvain, Belgium)

- 16h10 – 16h30 **27** Gastrointestinal anthrax disease
MISSIAKAS Dominique
The University of Chicago, Chicago, IL, USA
- 16h30 – 16h50 **28** The capsule of *Bacillus anthracis* protects it from the bactericidal activity of human defensins and other cationic antimicrobial peptides
RIBOT Wilson
United States Army Medical Research Institute of Infectious Diseases, Frederick, Maryland, USA

16h50 – 18h00
Poster Session 2
Including online posters

Day 4 – Wednesday April 27, 2022

Session 9 Regulation (2)
MAHILLON Jacques (UCLouvain, Belgium) – ØKSTAD Ole-Andreas (University of Oslo, Norway)

- 09h00 – 09h20 **29** Attenuating bacterial pathogenicity by blocking the quorum-sensing systems
HAYOUKA Zvi
Institute of Biochemistry, Food Science and Nutrition, Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem, Rehovot, Israel
- 09h20 – 09h40 **30** *Bacillus anthracis* Zinc Uptake Regulator (ba zur) – Insights into Zinc Homeostasis of the Pathogen
BHATNAGAR Rakesh
Laboratory of Molecular Biology and Genetic Engineering, School of Biotechnology, Jawaharlal Nehru University, New Delhi and Amity University, Rajasthan, Jaipur, India

Session 10 Toxins and Therapies (2)
BLANKE Steven (University of Illinois, USA) – TOURNIER Jean-Nicolas (IRBA, France)

- 09h40 – 10h00 **31** A patient with inhalational anthrax who received Raxibacumab, Spain 2016
REZUSTA Antonio
Universitary Miguel Servet Hospital, Zaragoza, Spain
- 10h00 – 10h20 **32** Evaluation of *Bacillus anthracis* anti-PA83 antibodies persistence in sheep induced by administration of Sterne 34F2 vaccine
GALANTI Domenico
Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata, Anthrax Reference Institute of Italy, Foggia, Italy

Coffee break

- 10h50 – 11h10 **33** Study of nutritional limitations of wheat bran based culture medium for scaling up btk based biopesticides production
BARSSOUM Rita
Faculty of sciences, University Saint-Joseph de Beyrouth, Lebanon

Session 11 Phages and Plasmids
ØKSTAD Ole-Andreas (University of Oslo, Norway) – SLAMTI Leyla (INRAE Jouy-en-Josas, France)

- 11h10 – 11h30 **34** Deciphering the tectivirus-host recognition process in the biopesticide *Bacillus thuringiensis*
GILLIS Annika
Laboratory of Food and Environmental Microbiology, Earth and Life Institute; Nano-Biophysics, Louvain Institute of Biomolecular Science and Technology; UCLouvain, Louvain-la-Neuve, Belgium
- 11h30 – 11h50 **35** Transcriptional impact of pCER270 megaplasmid transfer in various hosts within the *Bacillus cereus* group
NEVERS Alicia
University Paris-Saclay, INRAE, Micalis Institute, AgroParisTech, Jouy-en-Josas, France
- 11h50 – 12h10 **36** Molecular characterization of holins encoded by *Bacillus cereus/Bacillus thuringiensis* phages to exit their bacterial host
NUTTEN Manon
Laboratory of Food and Environmental Microbiology, Earth and Life Institute, Université catholique de Louvain, Louvain-la-Neuve, Belgium

Lunch break

Free afternoon

Gala dinner 19h00 - Musée des Arts Forains

Day 5 – Thursday April 28, 2022

Session 12 Host-Pathogen interactions (2)
EHLING-SCHULZ Monika (Vetmeduni Vienna, Austria) – NIELSEN-LEROUX Christina (INRAE Jouy-en-Josas, France)

- 09h00 – 09h20 **37** *Bacillus anthracis* escape from infected macrophages: Germination-dependent remodeling of *Bacillus*-containing vacuoles (BCVs)
BLANKE Steven
Dpt of Microbiology, Biomedical and Translational Sciences Dpt, Carle Illinois College of Medicine, Dpt of Pathobiology, Center for Pathogen Diagnostics, Illinois Microbial Systems Initiative Center for Global Studies, University of Illinois, Urbana-Champaign, IL, USA
- 09h20 – 09h40 **38** Characterization of the epithelial responses triggered by *Bacillus thuringiensis* oral infections in *Drosophila*
MOUAWAD Carine
UR-EQU, Faculté des Sciences, Université Saint-Joseph de Beyrouth, Beirut, Lebanon
- 09h40 – 10h00 **39** Contribution of artificial intelligence for the epitope mapping of an anti-anthrax antibody
TOURNIER Jean-Nicolas
Institut de Recherche Biomédicale des Armées, Département Microbiologie et Maladies Infectieuses, Brétigny-sur-Orge, France

Session 13 Food microbiology and biofilms
BROUSSELLE Véronique (INRAE Avignon, France) – HAYOUKA Zvi (The Hebrew University of Jerusalem, Rehovot, Israel)

- 10h00 – 10h20 **40** The role of aromatic amino acid tyrosine in *Bacillus cereus* ATCC 14579 biofilm formation
HUIJBROOM Linda
Food Microbiology department, Wageningen University, The Netherlands

Coffee break

- 10h50 – 11h10 **41** *Bacillus cereus* growth and cereulide production in cow and plant-based milks
BUSS DA SILVA Nathalia
Food Safety Microbiology, Institute of Food Safety and Analytical Sciences, Food Safety Research Department, Nestlé Research, Lausanne, Switzerland
- 11h10 – 11h30 **42** Identification and characterization of *Bacillus cereus* group isolates from spinach by whole genome sequencing
ZHAO Xingchen
Food Microbiology and Food Preservation Research Unit, Department of Food Technology, Safety and Health, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium
- 11h30 – 11h50 **43** Molecular characterization of *Bacillus cereus sensu stricto* isolated from foodstuffs in Brazil
VIVONI Adriana
Fundação Oswaldo Cruz, Laboratório de Fisiologia Bacteriana, Rio de Janeiro/RJ, Brazil
- 11h50 – 12h10 **44** Identification of genetic markers for the discrimination of *Bacillus thuringiensis* within the *Bacillus* group, in a context of foodborne outbreak
FICHANT Arnaud
Université Côte d'Azur, CNRS, INRAE, ISA, France. Laboratory of Food Safety, University Paris-Est and French Agency for Food, Environmental and Occupational Health (ANSES), Maisons-Alfort, France.

Lunch break

Session 14 Spores and Sporulation (2)
GOHAR Michel (INRAE Jouy-en-Josas, France) – GOOSSENS Pierre (Institut Pasteur Paris, France)

- 14h00 – 14h20 **45** Coat bearding in *Bacillus cereus* sporangia arrested before engulfment completion reveals a new control for SigK factor activation
LABLAINE Armand
INRAE, Avignon Université, UMR SQPOV, Avignon, France
- 14h20 – 14h40 **46** Inability to synthesize anthrose leads to pathophysiological changes in *Bacillus anthracis*
NORRIS Michael
Spatial Epidemiology & Ecology Research Laboratory, Department of Geography, University of Florida, Gainesville, Florida; Emerging Pathogens Institute, University of Florida, Gainesville, Florida, USA
- 14h40 – 15h00 **47** The role of novel pilus-like endospore appendages in attachment to abiotic surfaces and the subsequent biofilm formation
JONSMOEN Unni Lise
Department of Parasitological Sciences, Faculty of Veterinary Medicine, Norwegian University of Life Sciences (NMBU), Norway
- 15h00 – 15h20 **48** BC group spore detection: What, where, and how much? Strategies for lab and field quantification of pathogenic *Bacillus* spores
MOTESHAREIE Houman
Interdisciplinary Institute for Technological Innovation (3IT), Department of Electrical and Computer Engineering, Université de Sherbrooke, Sherbrooke, Québec, Canada

Coffee break

End of Conference