


## PRELIMINARY PROGRAM

**Wednesday April 15<sup>th</sup>**

**13.30-14.50** Registration

**14.50-15.00** Opening Remarks - Ezio Ricca

**15.00-16.00** **Opening Lecture**  
**Peter Setlow** (University of Connecticut Health Center, US)  
 "Spore mRNA - What's Up With That?"

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**16.30-18.40** **Session I: The Spore Surface**  
**Chair: Peter Setlow**

**16.30-17.00** **Patrick Eichenberger** (New York University, US)  
 Morphology and properties of the spore surface in *Bacillus subtilis*

**17.00-17.20** **Rachele Isticato** (Federico II University, Naples, Italy)  
 The spore surface: a dynamic structure

**17.20-17.40** **Armand Lablaine** (INRAE Avignon, France)  
 The morphogenetic proteins CotE directs exosporium formation and attachment by positioning CotY and ExsY during *Bacillus cereus* sporulation

**17.40-18.00** **Janine Liedtke** (Norwegian University of Life Science, NO)  
 The benefit of being hairy - Spore surface structures of *Bacillus cereus*

**18.00-18.20** **Ainhoa Dafis-Sagarmendi** (Sheffield University, UK)  
 Ultrastructure of *Clostridium botulinum*/sporogenes endospores by electron microscopy and electron crystallography



**18.20-18.40** **Sina Schack** (Cambridge University, UK)  
 Expression and crystallisation strategies for spore coat and exosporium proteins

**18.40-21.30** Welcome reception

**Thursday April 16<sup>th</sup>**

**Session II: Sporulation 1**  
**Chair: Richard Losick**

**09.00-09.20** **Fernando Ramírez-Guadiana** (Harvard Medical School, US)  
 A comparative analysis of spore formation in *Bacillus subtilis* and *Bacillus cereus*

**09.20-09.40** **Taylor B. Updegrove** (NIH, US)  
 Resurrection of ancestral GTPase activity in an extant bacterial ATPase reveals a nucleotide base requirement for function

**09.40-10.00** **Katarina Muchová** (Slovak Academy of Sciences, Slovakia)  
 Linking peptidoglycan synthesis protein complex with asymmetric cell division during *Bacillus subtilis* sporulation

**10.00-10.20** **Javier Lopez-Garrido** (Max Planck Institute, Germany)  
 Metabolic differentiation and intercellular nutrient transport underpin *Bacillus subtilis* sporulation

**10.20-10.40** **Ahmed Mohamed** (UTS, Australia)  
 Chromosome translocation during sporulation occurs through a highly stabilized aqueous pore within the septal membrane

**10.40-11:20** Break with refreshment

<b>Session III: Sporulation 2</b> <b>Chair: Imrich Barak</b>	
11.20-11.40	<b>Mihael Spacapan</b> (University of Ljubljana, Slovenia) The peptide quorum sensing system ComQXPA triggers spore formation at the onset of <i>Bacillus subtilis</i> floating biofilm formation
11.40-12.00	<b>Ilka B. Bischofs</b> (Max Planck Institute, Germany) FRET-based quantitative analysis of PhrA signaling in <i>Bacillus subtilis</i>
12.00-12.20	<b>Rivka L. Isaacson</b> (King's College London, UK) Structural and functional insights into proteins that regulate spore-formation
12.20-12.40	<b>Monica Serrano</b> (ITQB, Oeiras, Portugal) A regulatory protein that specifically represses sporulation initiation in <i>Clostridioides difficile</i>
12.40-13.00	<b>Ivan Gout</b> (University College London, UK) Understanding the role of coenzyme A and protein CoAlation in metabolic dormancy of bacterial spores
13.00-15.00	<b>Lunch &amp; Poster session</b>

<b>Session IV: Spore Germination</b> <b>Chair: Patrick Eichenberger</b>	
15.00-15.30	<b>Graham Christie</b> (Cambridge University, UK) Revisiting cortex hydrolysis in <i>Bacillus cereus</i> spores
15.30-15.50	<b>Carolina Alves Feliciano</b> (Tufts University School of Medicine, US) Spore cortex modification: a CwID-GerS dependent mechanism in the <i>Peptostreptococcaceae</i>
15.50-16.10	<b>Bing Hao</b> (University of Connecticut Health Center, US) Structural and functional analyses of the N-terminal domain of the A subunit of a <i>Bacillus megaterium</i> spore germinant receptor
16.10-16:50	<b>Break with refreshment</b>

16.50-17.20	<b>Stanley Brul</b> (University of Amsterdam, The Netherlands) Visualization and live-imaging of germination proteins in wild-type Bacilli with a novel super-resolution technique
17.20-17.40	<b>David L. Popham</b> (Virginia Tech, US) Effects of Intrinsic Protease Activities on Germination of <i>Bacillus subtilis</i> Spores
17.40-18.00	<b>Beiyan Nan</b> (Texas A&M Univ, US) Establishing Rod-Shape from Spherical, Peptidoglycan-Deficient Bacterial Spores
18.00-18.20	<b>Alessia I. Delbrück</b> (ETH Zurich, Switzerland) The Study of Heterogeneous <i>Bacillus</i> Spore Germination under High Pressure

## Friday April 17<sup>th</sup>

### Session V: *Clostridioides difficile* Chair: Graham Christie

09.00-09.30	<b>Isabelle Martin-Varstraete</b> (Institut Pasteur, Paris, France) The alternative sigma factor $\sigma_B$ is involved in the tolerance to O <sub>2</sub> and in the control of sporulation in <i>Clostridium difficile</i>
09.30-09.50	<b>Joseph A. Sorg</b> (Texas A&M Univ, US) Investigating the roles of the small acid-soluble proteins in <i>Clostridioides difficile</i> spore resistance
09.50-10:10	<b>Adriano O. Henriques</b> (ITQB, Oeiras, Portugal) Control of the mother cell transcriptional cascade by a conserved thiol protease involved in the assembly of the spore surface layers
10:10-10:30	<b>Daniel Paredes-Sabja</b> (Univ. Andrés Bello, Santiago, Chile) TBA
10:30-10:45	<b>William Ferreira</b> (Royal Holloway University of London, UK) Reduced Exposure to Environmental Spore Formers Increases Susceptibility to <i>C. difficile</i> Infection
10.45-11.00	<b>Raquel Dias Maia</b> (Federico II University, Italy) Induction of a specific humoral immune response by nasal delivery of BclA2 <sub>CTD</sub> of <i>Clostridioides difficile</i>
11.00-11:30	<b>Break with refreshment</b>




<b>Session VI: Probiotics</b> <b>Chair: Simon Cutting</b>	
11.30-11.50	<b>Maria Doitsidou</b> (University of Edinburgh, UK) Probiotic <i>Bacillus subtilis</i> protects against alpha-synuclein aggregation in <i>C. elegans</i>
11.50-12.10	<b>Emilia Ghelardi</b> (University of Pisa, Italy) Potential health benefits of probiotic <i>Bacillus clausii</i>
12.10-12.30	<b>Loredana Baccigalupi</b> (Federico II University, Naples, Italy) A probiotic treatment increases the immune response induced by the nasal delivery of spore-adsorbed TTFC
12.30-12.45	<b>Jared Heffron</b> (Novozymes A/S, Bagsværd, Denmark) The discovery and production of a <i>Bacillus</i> spore-based probiotic for the poultry industry
12.45-13.00	<b>Ashton Harper</b> (ADM Protexin Ltd, UK) Microbes and Migraines: a review of mechanisms and management
13.00-15.00	<b>Lunch &amp; Poster session</b>



<b>Session VII: Food spoilage</b> <b>Chair: Isabelle Martin-Verestraette</b>	
15.00-15.20	<b>Louis Coroller</b> (University of Brest, Quimper, France) Effects of temperature, pH and water activity on the growth and the sporulation abilities of <i>Bacillus subtilis</i> BSB1
15.20-15.40	<b>Jan Smelt</b> (University of Amsterdam, The Netherlands) Heat activation and inactivation of bacterial spores. Is there an overlap?
15.40-15.55	<b>Fang Li</b> (Teagasc Food Research Center, Cork, Ireland) <i>Bacillus licheniformis</i> spores in dairy: Identification in raw milk sequential heating process
15.55-16.10	<b>Tanushree B. Gupta</b> (Hopkirk Research Institute, New Zealand) Detection and identification of food spoilage spore forming bacteria from raw and UHT milk
16.10-16.40	<b>Break with refreshment</b>

<b>Session VIII: Spore resistance</b> <b>Chair: Stanley Brul</b>	
16.40-17.00	<b>Katrien Begyn</b> (Ghent University, Belgium) <i>Bacillus weihenstephanensis</i> can readily improve its endospore heat resistance without compromising its psychrotolerant vegetative growth characteristics
17.00-17.20	<b>Tom Dongmin Kim</b> (KU Leuven, Belgium) The <i>pdaA</i> gene as a contingency locus for tuning UV-C resistance of <i>Bacillus cereus</i> endospores despite fitness costs in germination efficiency and heat resistance
17.20-17.40	<b>Yifan Zhang</b> (ETH Zurich, Switzerland) Bacillus and Geobacillus spore resistance to low energy electron beam: role of different DNA repair mechanisms
17.40-17.55	<b>Fatima Fekraoui</b> (Université de Bourgogne / AgroSup Dijon, France) How bacterial spores are inactivated by high pressure? Focus on the evolution of spore compartments' viscosity
17.55-18.10	<b>Dmitry Malyshev</b> (Umea University, Sweden) Thermal effect on bacterial spores from Laser Tweezers Raman Spectroscopy measurements

18.15-19.15	Closing lecture <b>Richard Losick</b> (Harvard University, US) Stochasticity and cell fate in <i>Bacillus subtilis</i>	partially supported by  <b>microorganisms</b>
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19.15-19.30	<b>Closing remarks</b>
20.00-23.00	<b>Social Dinner</b>