



# bacell

## 2019

LJUBLJANA  
SLOVENIA

Bacell Meeting

Biotechnical Faculty, Jamnikarjeva 101, Ljubljana



9-10 April 2019



Univerza v Ljubljani  
*Biotehniška* fakulteta

## Conference Chair

Ines Mandić Mulec



## Organising committee

Tjaša Danevčič

Polonca Štefanič

Simona Leskovec

## BACELL 2019 Registration Secretariat



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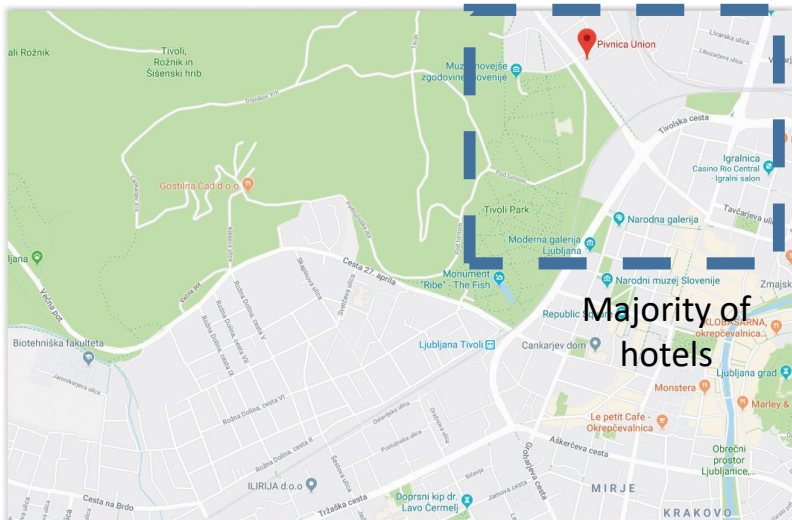


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# General Information

Conference venue: Biotechnical faculty, Jamnikarjeva 101, Ljubljana, Slovenia



# Program

## Tuesday 9<sup>th</sup> April

8:30 – 9:00 Registration

9:00 – 9:10 Welcome

### Session 1 - Stress response

**Chair: Ulrike Mäder** (University of Greifswald, Germany)

- |               |   |
|---------------|---|
| 9:10 – 9:25   | O1 - Kürşad Turgay (Leibniz University of Hannover, Germany): <b>The interplay of heat shock and stringent response in <i>Bacillus subtilis</i></b>   |
| 9:30 – 9:45   | O2 - Zuzana Chromiková (Institute of Molecular Biology, SAS, Slovakia): <b>Microbial tolerance to heavy metal stress</b>  |
| 9:50 – 10:00  | O3 - Marietta Thüring (Philipps University Marburg, Germany): <b>6S RNA makes the difference when bacteria are in trouble</b>   |
| 10:05 – 10:15 | O4 - Hermann Rath (University of Greifswald, Germany): <b>Alterations in gene expression of <i>Bacillus subtilis</i> caused by high salinity and the compatible solute glycine betaine</b>            |
| 10:20 – 10:30 | O5 - Jolanda Neef (University of Groningen, The Netherlands): <b>Systematic analysis of the roles of individual Sec pathway components in high-level enzyme secretion by <i>Bacillus subtilis</i></b> |
| 10:35 – 11:00 | <b>Tea and Coffee Break</b>   |

### Session 2- Sporulation and cell cycle

**Chair: Iztok Dogsa** (University of Ljubljana, Slovenia)

- |               |   |
|---------------|---|
| 11:00 – 11:15 | O6 – Heath Murray (Newcastle University, UK): <b>Identification of a basal system for bacterial chromosome origin unwinding</b> |
|---------------|---|

11:20 – 11:35	O7 - Aleksandra Zielińska (University of Groningen, The Netherlands): <b>Efficient cell wall synthesis relies on flotillin modulated membrane fluidity</b>
11:40 – 11:55	O8 - Robyn Eijlander (NIZO, The Netherlands): <b>Spores of Bacillaceae – the importance of translating fundamental knowledge to practical solutions</b>
12:00 – 12:15	O9 - Rachele Istatico (University of Naples Federico II, Italy): <b>A heat-labile regulatory protein mediates spore coat formation in <i>Bacillus subtilis</i></b>
12:20 – 12:30	O10 - Yifan Zhang (ETH Zürich, Switzerland): <b><i>Bacillus</i> spore under high pressure: dormancy, germination and inactivation</b>
12:35 – 14:00	<b>Lunch Break and Poster session 1</b>

### Session 3 - Evolution and mobile genetic elements

**Chair: Ákos T. Kovács** (Technical University of Denmark, Denmark)

14:00 – 14:15	O11 - Anna Dragoš (Technical University of Denmark, Denmark): <b>Braking bad of bacterial viruses during experimental evolution</b>
14:20 – 14:35	O12 - Sjouke Piersma (University of Groningen, The Netherlands): <b>Differential expression of a prophage-encoded glycoцин and its immunity protein suggests a mutualistic strategy of a phage and its host</b>
14:40 – 14:55	O13 - Melih Yüksel (University of Cologne, Germany): <b>Cross-species gene transfer rapidly navigates a complex fitness landscape</b>
15:00 – 15:10	O14 - Luiza P. Morawska (University of Groningen, The Netherlands): <b>Cell-to-cell non-conjugative molecular transfer between <i>Bacillus subtilis</i> and Lactic Acid Bacteria</b>
15:15 – 15:25	O15 - Nancy Fayad (KU Leuven, Belgium): <b><i>Bacillus cereus sensu lato</i> group: a mine of Mobile Genetic Elements</b>
15:30 – 16:00	<b>Tea and Coffee Break</b>



## Session 4 – Antimicrobials and toxins

**Chair: Sven Halbedel** (Robert Koch Institute, Germany)

- 16:00 – 16:15 O16 - Leendert W. Hamoen (University of Amsterdam, The Netherlands): **New sample preparation method for transmission electron microscopy reveals a new mechanism of tetracycline**
- 16:20 – 16:35 O17 - Loredana Baccigalupi (University of Naples Federico II, Italy): **Antimicrobials produced by a marine strain of *Bacillus pumilus***
- 16:40 – 16:55 O18 - Katia Rouzeau-Szynalski (Nestlé, Switzerland): **Classification of emetic *Bacillus cereus* strains as low, medium or high cereulide producer in milk**
- 17:00 – 17:15 O19 – Monika Ehling-Schulz (University of Veterinary Medicine Vienna, Austria): **First insights into within host translocation of the *Bacillus cereus* toxin cereulide using a porcine model**
- 17:20 – 17:30 O20 - Samuel Hauf (Robert Koch Institute, Germany): **Aurantimycin resistance genes found in *Listeria monocytogenes* are prevalent in the Firmicutes Phylum**
- 17:35 – 19:30 **Poster Session 2 and Slovenian beer, wine and cheese tasting**

## Wednesday 10<sup>th</sup> April

### Session 5 - Microbial Interactions

**Chair: Polonca Stefanic** (University of Ljubljana, Slovenia)

- 9:00 – 9:15 O21 - Ákos T. Kovács (Technical University of Denmark, Denmark): **When *Bacillus subtilis* meets a fungus: interaction with *Aspergillus niger***
- 9:20 – 9:35 O22 - Moshe Shemesh (Agricultural Research Organization, Israel): **Live-encapsulation of probiotic *Bacilli* in extracellular matrix increases their survivability during environmental stresses through antagonizing pathogenic bacteria**

9:40 – 9:55	O23 - Zhihui Xu (Nanjing Agricultural University, China): <b>The social network of rhizobacteria after applied <i>Bacillus velezensis</i> strains into cucumber rhizosphere</b>
10:00 – 10:15	O24 - Sylvie Nessler (Institute for Integrative Biology of the Cell, France): <b>How quorum sensing regulates the cell cycle of <i>Bacillus cereus</i></b>
10:20 – 10:35	O25 - Iztok Dogsa (University of Ljubljana, Slovenia): <b>A new category of bacterial communication systems: ultra-economic and ultra-sensitive quorum sensing in <i>Bacillus subtilis</i>.</b>
10:40 – 11:15	<b>Tea and Coffee Break</b>

## Session 6 - Gene regulation

**Chair: Henrik Strahl** (Newcastle University, United Kingdom)

11:15 – 11:30	O26 - Ken-ichi Yoshida (Kobe University, Japan): <b>Monitoring NADPH regeneration by luciferase luminescence in <i>Bacillus subtilis</i></b>
11:35 – 11:50	O27 - Elena Bidnenko (Micalis Institute, INRA, France): <b>New insights into the role of transcription termination factor Rho in regulation of gene expression in <i>Bacillus subtilis</i></b>
11:55 – 12:10	O28 - Saori Kosono (University of Tokyo, Japan): <b>Dynamic changes in lysine acetylation and succinylation of the elongation factor Tu in <i>Bacillus subtilis</i></b>
12:15 – 12:30	O29 – Harald Putzer (Université Paris Diderot, France): <b>Dynamics of RNase Y membrane localization in <i>Bacillus subtilis</i></b>
12:35 – 12:45	O30 - Anja Pavlin (University of Ljubljana, Slovenia): <b>Lytic/ lysogenic switch of the <i>Bacillus thuringiensis</i> temperate bacteriophage GIL01</b>
12:50 – 14:30	<b>Lunch break and Poster session 3</b>

## Session 7 - Biotechnology I

**Chair: Robyn Eijlander** (NIZO, The Netherlands)

- 14:30 – 14:45      O31 - Margo Diricks (BioMérieux, Belgium): **Rapid surveillance of *Bacillus cereus* outbreaks with an integrated whole genome MLST and SNP analysis**
- 14:50 - 15:05      O32 – Erlinda Rama (University of Pavia, Italy): **Integration of enzymatic data in *Bacillus subtilis* genome-scale metabolic model improves phenotype predictions and enables in silico design of poly-γ-glutamic acid production strains**
- 15:10 – 15:25      O33 - Marcin Łukaszewicz (University of Wrocław, Poland): **The biorefinery: from industrial biomass to value added products**
- 15:30 – 15:40      O34 - Maria Alexandri (Leibniz Institute for Agricultural Engineering and Bioeconomy, Germany): ***Bacillus coagulans*: a promising strain for the industrial production of L-lactic acid from renewable resources**
- 15:45 – 16:10      **Tea and Coffee Break**

## Session 8 - Biotechnology II

**Chair: Elena Bidnenko** (Micalis Institute, INRA, France)

- 16:10 – 16:25      O35 - Sabine Schneider (Technical University of Munich, Germany): **Genetic code expansion and large scale protein expression and functionalisation in *Bacillus subtilis***
- 16:30 – 16:45      O36 - Ingy I. Abdallah (University of Groningen, The Netherlands): **Metabolic engineering of *Bacillus subtilis* toward biosynthesis of the terpenoids, Taxol and artemisinin**
- 16:50 – 17:00      O37 - José Pablo López-Gómez (Leibniz Institute for Agricultural Engineering and Bioeconomy, Germany): **Production of lactic acid from the organic fraction of municipal solid wastes using *B. coagulans*.**

- 17:05– 17:15      O38 - Linda Schroedter (Leibniz Institute for Agricultural Engineering and Bioeconomy, Germany): **High optical pure L-(+)-lactic acid from reed employing *Bacillus coagulans*: Comparison of various nitrogen sources for the nutrient provision**
- 17:20-17:30      Closing remarks
- 19:30 – 2:00      Conference dinner at Union Pub, Pivovarniška ulica 2, Ljubljana

## Location:



**Sponsored by:**

P1 – James Grimshaw (Newcastle University, UK): **Induced Formation of Membrane Associated RNA Degradosome in *Bacillus subtilis***

P2 – Michael D. Rasmussen (Novozymes, Denmark): **Heterologous expression of Amylase and PrsA pairs and their influence on the secretion stress response in *Bacillus subtilis***

P3 – Sabrina Wamp (Robert Koch Institute, Germany): **Identification of a novel cell division protein in Gram-positive bacteria**

P4 - Katarína Muchová (Institute of Molecular Biology, Slovak Academy of Sciences, Slovakia): **The role of *Bacillus subtilis* RodZ protein in mid-cell and asymmetric cell division**

P5 – Fella Hamitouche (INRA, France): **Linking extracellular redox dynamic with *Bacillus cereus* Redoxome**

P6 – Alessia Vercio (University of Liège, Belgium): ***skfA* regulation and new insight on the onset of the sporulation in *Bacillus subtilis***

P7 - Carsten Haupka (Bielefeld University, Germany): **Requirements for methanol-based production of lysine derivatives in *Bacillus methanolicus***

P8 – Jacek K. Bardowski (Institute of Biochemistry and Biophysics PAS, Poland): **Microbiological and molecular characteristics of 936-type lactococcal bacteriophages infecting the dairy environment**

P9 – Grace Taylor-Joyce (University of Warwick, UK): **The impact of a horizontally acquired virulence plasmid on *Bacillus cereus* G9241, the causative agent of an anthrax-like illness**

P10 – Katarina Belcijan (university of Ljubljana, Slovenia): ***Bacillus subtilis* prefers to exchange their DNA with less related strains**

P11 – Nan Zhang (Nanjing Agricultural University, China): **Recognition of dominant attractants by key chemoreceptors mediates recruitment of plant growth-promoting rhizobacteria**

P12 – Bodil Kjeldgaard (Technical University Denmark, Denmark): **Attachment of *Bacillus subtilis* to *Aspergillus niger* hyphae depends on the major biofilm components**

P13 – Tjaša Danevčič (University of Ljubljana, Slovenia): ***Bacillus subtilis* alters antibiotic production by *Streptomyces rapamycinicus***

P14 – Wout Overcamp (Koppert Biological Systems, The Netherlands): **Antagonism of *Bacillus amyloliquefaciens* against *Botrytis cinerea***

P15 – Lisa Thijs (Kemin Europa N.V., Belgium): ***Bacillus subtilis* is able to reduce translocation and invasion of *Campylobacter jejuni* in poultry**

P16 – Andi Erega (University of Ljubljana, Slovenia): ***Bacillus subtilis* overrides *Campylobacter jejuni* biofilm**

P17 – Xinli Sun (Nanjing Agricultural University, China): **Identification of rhizospheric bacteria interacting with *Bacillus amyloliquefaciens* SQR9**

P18- Mihael Spacapan (University of Ljubljana, Slovenia): **The unexpected consequences of quorum sensing in *Bacillus subtilis* floating biofilms**

P19 – Barbara Kraigher (University of Ljubljana, Slovenia): **Surface exclusion in *Bacillus subtilis* swarming is driven by kin discrimination**

P20 – Maja Bolješić (University of Ljubljana, Slovenia): **Kinship affects social interactions and territoriality in *Bacillus subtilis* biofilms**

P21 - Heiko T. Kiesealder (Technical University Denmark, Denmark): **Characterization of *Bacillus subtilis* secondary metabolites for biocontrol**

P22 – Agnieszka Gacek-Matthews (University of Veterinary Medicine Vienna, Austria): **CesCD, putative ABC efflux pump with a binary role**

P23 – Vladimir Zanki (University of Zagreb, Croatia): **IleRS2 is responsible for mupirocin resistance of *Bacillus megaterium***

P24 – Fuad Alatawi (Newcastle University, UK): **Secondary metabolite production of *Bacillus* spp**

P25 - Abhroop Garg (Technical University Denmark, Denmark): **Production of 3-hydroxypropanoic acid in *Bacillus subtilis***

P26 - Kerstin Schultenkämper (Bielefeld University, Germany): **Establishment and application of CRISPR interference to affect sporulation and mannitol metabolism in the methylophilic thermophile *Bacillus methanolicus* MGA3**

P27 - Claudia Y. Munoz Moreno (University of Groningen, The Netherlands): **Antimicrobial properties of a wide variety of wild *Bacillus* strains and spore germination mechanisms in the tomato and lettuce phyllosphere**

P28 - Shadi Rahimi (Chalmers University of Technology, Sweden): ***Bacillus subtilis* capacity for waste water treatment in microbial fuel cells**

P29 - Yafeng Song (University of Groningen, The Netherlands): **Production of Squalene in *Bacillus subtilis***

P30 - Margo Diricks (BioMérieux, Belgium): **High-throughput and high resolution typing of *Bacillus subtilis* with wgMLST in BioNumerics®**

P31 - Marcus A. Price (University of Edinburgh, UK): **Expanding the *Bacillus subtilis* CRISPR Tool Kit: base editing and alternative CRISPR-associated nucleases**

P32 - Josef Altenbuchner (University of Stuttgart, Germany): **Improving gene expression in *Bacillus subtilis* by multiple chromosomal insertions employing CRISPR-Cas9**

P33 - Jennifer Wright (Newcastle University, UK): **The study of the activation of *Bacillus subtilis* urease *in vivo***

P34 – Shathviga Manoharan (University of Warwick, UK): **The role and regulation of the PlcR-PapR circuit in *B. cereus* G9241, the causative agent of anthrax-like agent**

P35 – Dominika Tomoń (InventionBio, Poland): **Development and optimization of a culture media for growth and production of gamma-PGA in submerged fermentation by *Bacillus* strain isolated from the quinoa-based food product**