

2015

Polar & Alpine Microbiology



PAM 2015

# 6<sup>th</sup> International Conference on Polar and Alpine Microbiology

September 6 – 10, 2015

Centre for Polar Ecology, Faculty of Science, University of  
South Bohemia in České Budějovice

České Budějovice

## Programme & Abstracts

Edited by Jana Kvíderová, Daria Tashyreva, Alexandra Bernardová & Josef Elster



Přírodovědecká  
fakulta  
Faculty  
of Science



INSTITUTE  
OF BOTANY ASCR

# Conference programme

## Conference schedule

|       | Sun September 6                               | Mon September 7   | Tue September 8   | Wed September 9  | Thr September 10                    |
|-------|---|---|---|--|-------------------------------------|
| 8:00  |   | <b>Registration</b><br>(Building C lobby)                                   |   |  |                                     |
| 8:20  |   | <b>Welcome speech</b><br>(Lecture room)                                     | <b>Registration</b><br>(Building C lobby)                       | <b>Registration</b><br>(Building C lobby)                                  |                                     |
| 8:30  |   | <b>Polar/alpine microbiology and environmental change</b><br>(Lecture room) | <b>Microbial diversity and evolution</b><br>(Lecture room)      | <b>Supraglacial, subglacial and glacial microbiology</b><br>(Lecture room) | <b>Excursion</b><br>(South Bohemia) |
| 10:00 |   | <b>Coffee break</b><br>(Building C lobby)                                   | <b>Coffee break</b><br>(Building C lobby)                       | <b>Coffee break</b><br>(Building C lobby)                                  |                                     |
| 10:30 |   | <b>Polar/alpine microbiology and environmental change</b><br>(Lecture room) | <b>Microbial diversity and evolution</b><br>(Lecture room)      | <b>Supraglacial, subglacial and glacial microbiology</b><br>(Lecture room) |                                     |
| 11:50 |   |   |   | <b>Lunch</b><br>(Canteen)  |                                     |
| 12:10 |   | <b>Lunch</b><br>(Canteen)   | <b>Lunch</b><br>(Canteen)                                       |  |                                     |
| 13:00 |   | <b>Cold physiology and cryobiology</b><br>(Lecture room)                    | <b>Microbial diversity and evolution</b><br>(Lecture room)      | <b>Supraglacial, subglacial and glacial microbiology</b><br>(Lecture room) |                                     |
| 14:00 |   |   | <b>Coffee break</b><br>(Building C lobby)                       | <b>Coffee break</b><br>(Building C lobby)                                  |                                     |
| 14:30 |   | <b>Coffee break</b><br>(Building C lobby)                                   | <b>Polar/alpine eukaryotic microorganisms</b><br>(Lecture room) | <b>Astrobiology of icy worlds</b><br>(Lecture room)                        |                                     |
| 15:00 |   | <b>Cold physiology and cryobiology</b><br>(Lecture room)                    |   |  |                                     |
| 16:00 | <b>Registration</b><br>(Building C lobby)     | <b>Coffee break</b><br>(Building C lobby)                                   | <b>Coffee break</b><br>(Building C lobby)                       | <b>Coffee break</b><br>(Building C lobby)                                  |                                     |
| 16:20 |   | <b>Coffee break</b><br>(Building C lobby)                                   |   |  |                                     |
| 16:30 |   | <b>Poster Session A</b><br>Official part<br>(Building C lobby)              | <b>Polar/alpine cyanobacteria</b><br>(Lecture room)             | <b>Biotechnology at low temperatures</b><br>(Lecture room)                 |                                     |
| 17:20 |   |   | <b>Coffee break</b><br>(Building C lobby)                       |  |                                     |
| 17:30 |   |   | <b>Poster Session A</b><br>Official part<br>(Building C lobby)  |  |                                     |
| 18:00 | <b>Opening ceremony</b><br>(Building C lobby) |   |   | <b>Closing ceremony</b><br>(Lecture room)                                  |                                     |
| 18:30 | <b>Icebreaker party</b><br>(Building C lobby) | <b>Poster session A with Budvar beer</b><br>(Building C lobby)              | <b>Poster session B with Budvar beer</b><br>(Building C lobby)  |  |                                     |
| 19:00 |   |   |   |  |                                     |
| 19:10 |   |   |   |  |                                     |
| 19:50 |   |   |   |  |                                     |
| 20:00 |   |   |   | <b>Conference Dinner</b><br>(Masné krámy)                                  |                                     |
| 22:00 |   |   |   |  |                                     |

## Conference programme

### Sunday September 6, 2015

- 16:00 - 21:00 **Registration**  
 18:00 - 18:30 **Opening ceremony**  
 18:30 - 22:00 **Icebreaker party**

### Monday September 7, 2015

- 8:00 - 17:00 **Registration**  
 8:20 - 8:30 **Welcome speech**

### A. Polar/alpine microbiology and environmental change: past, present and future

**Minna K. Männistö (Chair)**

*Finnish Forest Research Institute, Rovaniemi, Finland*

**Max Häggblom (Co-Chair)**

*Rutgers University, USA*

- |                      |                     |  |        |
|----------------------|---------------------|--|--------|
| 8:30 - 9:00          | Minna K. Männistö   | The impact of large grazers on the responses of soil microbial communities to warming and increased nitrogen availability        | KN-A   |
| 9:00 - 9:20          | Alexandre Anesio    | Microbial succession from ice to vegetated soils in the High Arctic  | L-A-01 |
| 9:20 - 9:40          | Craig Cary          | Resolving spatial and temporal heterogeneity in terrestrial Antarctic microbial communities                                      | L-A-02 |
| 9:40 - 10:00         | Max Häggblom        | Bacterial utilization of carbon and nitrogen at subzero temperatures in tundra soils   | L-A-03 |
| <b>10:00 - 10:30</b> | <b>Coffee break</b> |  |        |
| 10:30 - 10:50        | Elisabeth Helmke    | Arctic bacterial sea ice communities affected by global warming  | L-A-04 |
| 10:50 - 11:10        | Anne Jungblut       | Microbial mat communities along environmental gradients in perennially ice covered Antarctic lakes                               | L-A-05 |
| 11:10 - 11:30        | Gabriela Mataloni   | Microbial planktonic communities as environmental indicators in a Tierra del Fuego peat bog                                      | L-A-06 |
| 11:30 - 11:50        | Laura Selbmann      | Environmental pressure and variation of fungal biodiversity in rock microbial communities of Northern Victoria Land (Antarctica) | L-A-07 |
| 11:50 - 12:10        | Ruben Sommaruga     | Changes in bacterial community composition along a turbidity gradient in recently-formed lakes in SW Greenland                   | L-A-08 |
| <b>12:10 - 13:00</b> | <b>Lunch</b>        |  |        |

## C. Cold physiology and cryobiology

**Anders Priemé** (Chair)

*Geological Survey of Denmark and Greenland, Copenhagen, Denmark*

**Antonio Quesada** (Co-Chair)

*Universidad Autónoma de Madrid, Spain*

|                                   |   |       |                     |  |        |
|-----------------------------------|---|-------|---------------------|--|--------|
| 13:00                             | - | 13:30 | Andres Priemé       | Microbial activity in newly thawed permafrost soil   | KN-C   |
| 13:30                             | - | 13:50 | Klaus Herburger     | Callose acts against desiccation: induced forces in filamentous streptophyte green algae from alpine regions                             | L-C-01 |
| 13:50                             | - | 14:10 | Thulani Makhwanyane | Meta-omic analysis reveals widespread functionality in Antarctic hypoliths from two Dry Valley system                                    | L-C-02 |
| 14:10                             | - | 14:30 | Riitta Nissinen     | Some like it cold, some like it green, some like it cold and green - comparative genomics of sphingomonads associated with Arctic plants | L-C-03 |
| <b>14:30 - 15:00 Coffee break</b> |   |       |                     |  |        |
| 15:00                             | - | 15:20 | Elena Patova        | Nitrogenase activity of soil cyanobacterial crusts in polar and subpolar Urals (European North-East Russia)                              | L-C-04 |
| 15:20                             | - | 15:40 | James Raymond       | Ice binding proteins of a snow alga, <i>Chloromonas brevispina</i> : probable acquisition by horizontal gene transfer                    | L-C-05 |
| 15:40                             | - | 16:00 | Daria Tashyreva     | The limits of desiccation tolerance of Arctic <i>Microcoleus</i> strains (Cyanobacteria) and environmental factors inducing it           | L-C-06 |
| 16:00                             | - | 16:20 | Cinzia Verde        | Coping with cold: from the structure to the function of Antarctic bacterial globins  | L-C-07 |

**16:20 - 16:30 Coffee break**

## Poster session A

16:30 - 17:30 Official part - Posters from Sections A, C, D and G; followed by beer party

## Tuesday September 8, 2015

8:00 - 17:00 **Registration**

## B. Microbial diversity and evolution

**David Pearce** (Chair)

*Northumbria University, Newcastle, UK*

**Dirk Wagner** (Co-Chair)

*German Research Center for Geosciences, Potsdam, Germany*

|      |   |      |              |  |      |
|------|---|------|--------------|--|------|
| 8:30 | - | 9:00 | David Pearce | So what is in the atmosphere - the last piece of the jigsaw? | KN-B |
|------|---|------|--------------|--|------|

|                                   |   |       |                       |   |        |
|-----------------------------------|---|-------|-----------------------|---|--------|
| 9:00                              | - | 9:20  | Natalia Belkova       | Variety and diversity of representatives of 'candidate' phyla in cold seeps from Sayan Mountains (Siberia, Russia)                              | L-B-01 |
| 9:20                              | - | 9:40  | Martin Hartmann       | Unraveling the unknown microbial diversity hidden in alpine permafrost  | L-B-02 |
| 9:40                              | - | 10:00 | Christoph Keuschnig   | Arctic snowpack-soil interface - strict boundary or ecosystem trading zone?   | L-B-03 |
| <b>10:00 - 10:30 Coffee break</b> |   |       |                       |   |        |
| 10:30                             | - | 10:50 | Yung Mi Lee           | Draft genome of members of the OP9 lineage obtained from single cells sorted from a marine sediment of the Ross Sea, Antarctica                 | L-B-04 |
| 10:50                             | - | 11:10 | John Prisco           | Methane transformations in Arctic and Antarctic ice-covered lakes   | L-B-05 |
| 11:10                             | - | 11:30 | Sara Rassner          | It pays to be a winner: viral control of the bacterial community of a High Arctic glacier surface   | L-B-06 |
| 11:30                             | - | 11:30 | Elizaveta Rivkina     | Metagenomics of permafrost - key for paleoecology   | L-B-07 |
| 11:50                             | - | 12:10 | Viktoria Shcherbakova | Sulfate-reducing bacteria in Arctic cryopegs  | L-B-08 |
| <b>12:10 - 13:00 Lunch</b>        |   |       |                       |   |        |
| 13:00                             | - | 13:20 | Guillaume Tahon       | Diversity of <i>cbbL</i> , <i>nifH</i> and <i>pufLM</i> genes in soils around the Princess Elizabeth Station, Sør Rondane Mountains, Antarctica | L-B-09 |
| 13:20                             | - | 13:40 | Bernhard Tschitschko  | Host-virus interaction in a frigid, hypersaline Antarctic lake revealed by metaproteomics   | L-B-10 |
| 13:40                             | - | 14:00 | Marc Van Goethem      | Microbial communities of Antarctic soil and lithic habitats   | L-B-11 |
| <b>14:00 - 14:30 Coffee break</b> |   |       |                       |   |        |

## F. Polar/alpine eukaryotic microorganisms

**Wim Vyverman** (Chair)

*Ghent University, Belgium*

**Nina Gunde-Cimerman** (Co-Chair)

*University of Ljubljana, Slovenia*

|                                   |   |       |                               |  |        |
|-----------------------------------|---|-------|-------------------------------|--|--------|
| 14:30                             | - | 15:00 | Wim Vyverman<br>Elie Verleyen | Post-Miocene divergence of polar diatom biomes                               | KN-F   |
| 15:00                             | - | 15:20 | Nina Gunde-Cimerman           | Black yeasts from glaciers to sauna - biological answer to a changing world? | L-F-01 |
| 15:20                             | - | 15:40 | Maxime Sweetlove              | Biogeographic zoning of aquatic microeukaryotes in the Antarctic realm       | L-F-02 |
| 15:40                             | - | 16:00 | Tatiana Vishnivetskaya        | Hunting for green algae and cyanobacteria in Siberian permafrost             | L-F-03 |
| <b>16:00 - 16:20 Coffee break</b> |   |       |                               |  |        |

**E. Polar/alpine cyanobacteria****Jiří Komárek** (Chair)*Academy of Science, Institute of Botany, Třeboň, Czech Republic***Annick Wilmotte** (Co-Chair)*Liege University, Belgium*

|       |   |       |              |   |        |
|-------|---|-------|--------------|---|--------|
| 16:30 | - | 17:00 | Jiří Komárek | Polar/Alpine cyanobacteria  | KN-E   |
| 17:00 | - | 17:20 | Antje Donner | Diversity of hypolithic cyanobacteria from three locations in western Spitsbergen | L-E-01 |

**17:20 - 17:30 Coffee break****Poster session B**

17:30 - 18:30 Official part - Posters from Sessions B, F, E and H; followed by beer party

**Wednesday September 9, 2015**8:00 - 12:00 **Registration****D. Supraglacial, subglacial and glacial microbiology****Andy J. Hodson** (Chair)*University of Sheffield, UK***Marek Stibal** (Co-Chair)*Charles University, Prague, Czech Republic*

|      |   |       |                  |  |        |
|------|---|-------|------------------|--|--------|
| 8:30 | - | 9:00  | Andy J. Hodson   | The ecology and biogeochemistry of maritime Antarctic snow                               | KN-D   |
| 9:00 | - | 9:20  | Liz Bagshaw      | Light adaptation of microbial communities in Antarctic cryoconite holes                  | L-D-01 |
| 9:20 | - | 9:40  | Karen Cameron    | Export of microbial cells from the Greenland Ice Sheet                                   | L-D-02 |
| 9:40 | - | 10:00 | Andrea Franzetti | Dynamics and microbial community functions in cryoconite from Italian Alps and Karakoram | L-D-03 |

**10:00 - 10:30 Coffee break**

|       |   |       |                 |  |        |
|-------|---|-------|-----------------|--|--------|
| 10:30 | - | 10:50 | Stefanie Lutz   | Biogeography and functionality of microbial glacial surface communities across the Arctic                  | L-D-04 |
| 10:50 | - | 11:10 | Lorrie Maccario | Microbial life in the arctic snowpack photochemical reactor  | L-D-05 |
| 11:10 | - | 11:30 | Birgit Sattler  | Settlement of an Alpine englacial system with microbial communities - who comes first?                     | L-D-06 |
| 11:30 | - | 11:50 | Takahiro Segawa | The nitrogen cycle in cryoconites: naturally occurring nitrification-denitrification granules on a glacier | L-D-07 |

**11:50 - 13:00 Lunch**

|       |   |       |               |  |        |
|-------|---|-------|---------------|--|--------|
| 13:00 | - | 13:20 | Mark Skidmore | Linking elemental cycles in subglacial systems through microbial processes | L-D-08 |
|-------|---|-------|---------------|--|--------|

|                                   |   |       |              |  |        |
|-----------------------------------|---|-------|--------------|--|--------|
| 13:20                             | - | 13:40 | Marek Stibal | The role of ice algae in the albedo feedback on the Greenland Ice Sheet                          | L-D-09 |
| 13:40                             | - | 14:00 | Jon Telling  | Between a rock and a hard place: rock comminution as a source of hydrogen for subglacial systems | L-D-10 |
| <b>14:00 - 14:30 Coffee break</b> |   |       |              |  |        |

## H. Astrobiology of icy worlds

**Jean-Pierre Paul de Vera (Chair)**

*Institute of Planetary Research, Berlin, Germany*

**Silvano Onofri (Co-Chair)**

*Università della Tuscia, Italy*

|       |   |       |                     |   |        |
|-------|---|-------|---------------------|---|--------|
| 14:30 | - | 15:00 | Jean-Pierre de Vera | Potential biospheres in the icy worlds in our solar system  | KN-H   |
| 15:00 | - | 15:20 | Sergey Bulat        | Microbiology of the subglacial lake Vostok: First results with borehole-frozen lake water and prospects   | L-H-01 |
| 15:20 | - | 15:40 | Silvano Onofri      | BIOMEX experiment: survival, ultrastructural and molecular damage in the cryptoendolithic Antarctic fungus <i>Cryomyces antarcticus</i> exposed to space and simulated Mars-like conditions | L-H-02 |
| 15:40 | - | 16:00 | Dirk Wagner         | <i>Methanosarcina soligelidi</i> SMA-21 - an archaeal candidate for life on Mars  | L-H-03 |

**16:00 - 16:30 Coffee break**

## G. Biotechnology at low temperatures

**Rosa Margesin (Chair)**

*Innsbruck University, Austria*

**Giuseppe Torzillo (Co-Chair)**

*CNR - Istituto per lo Studio degli Ecosistemi, Sesto Fiorentino, Italy*

|       |   |       |                         |   |        |
|-------|---|-------|-------------------------|---|--------|
| 16:30 | - | 17:00 | Rosa Margesin           | Biotechnological significance of microorganisms in low temperature environments         | KN-G   |
| 17:00 | - | 17:20 | Lorena Monserrate Maggi | Bioprospecting of Hg processing micro-organisms from South Shetlands Island, Antarctica | L-G-01 |
| 17:20 | - | 17:40 | Giuseppe Torzillo       | Development of photobioreactors for low-temperature environment                         | L-G-02 |
| 17:40 | - | 18:00 | Oddur Vilhelmsson       | Naphthalene-degrading bacteria associated with terricolous lichens in Iceland           | L-G-03 |

**18:00 - 18:30 Closing ceremony**

**20:00 - 22:00 Dinner at Masne Kramy**

## Thursday September 10, 2015

**8:30 - 22:00 Excursion**



## Poster session A

| Poster No | Presenting author |                      | Title   |        |
|-----------|-------------------|----------------------|---|--------|
| 1         | Ingeborg          | <b>Bussmann</b>      | Methane oxidation and methane distribution around the Lena Delta, Siberia, Russia   | P-A-01 |
| 2         | Alica             | <b>Chroňáková</b>    | Microbial community development on deglaciated soils in High Arctic (Svalbard) in comparison to sub-Arctic continental regions                                | P-A-02 |
| 3         | Miloslav          | <b>Devetter</b>      | Terrestrial invertebrates along a gradient of deglaciation in Svalbard: relation to microbial communities   | P-A-03 |
| 4         | Kateřina          | <b>Diáková</b>       | Microbial biomass as an indicator of carbon losses from subarctic tundra soils in changing environment  | P-A-04 |
| 5         | Roman             | <b>Dial</b>          | Snow algae increases snowmelt: results of manipulative experiment on the Harding Icefield, Alaska   | P-A-05 |
| 6         | Richard           | <b>Hill</b>          | Spatial and temporal influences on Arctic soil microbial community structure  | P-A-06 |
| 7         | Katrin            | <b>Hofmann</b>       | Spatial patterns of methane-cycling microorganisms in soils of a high-alpine altitudinal gradient   | P-A-07 |
| 8         | Weidong           | <b>Kong</b>          | Diversity and succession of autotrophic microbial communities in high-elevation soils along deglaciation chronosequence                                       | P-A-08 |
| 9         | Richard           | <b>Lamprecht</b>     | Soil mineralization sensitivity to temperature and O <sub>2</sub> availability in deep peat profiles including permafrost interface                           | P-A-09 |
| 10        | Yongqin           | <b>Liu</b>           | Ice cores from the Tibetan Plateau reveal microbial activity convergence related to climate and anthropogenic activity  | P-A-10 |
| 11        | Alena             | <b>Lukeřová</b>      | Role of soil algae and cyanobacteria in colonization and succession on deglaciated soils in High Arctic (Svalbard) and alpine/subalpine regions (Scandinavia) | P-A-11 |
| 12        | Rosa              | <b>Margesin</b>      | Effect of altitude and season on microbial functionalizy, community structure and abundance in alpine forest soils  | P-A-12 |
| 13        | Alejandro         | <b>Mateos-Rivera</b> | Shifts in microbial community structure in a glacier forefield (Styggedalsbreen, Central Norway)  | P-A-13 |
| 14        | Luis              | <b>Morgado</b>       | Compositional shifts in ectomycorrhizal fungal community in response to long-term snow depth increase   | P-A-14 |
| 15        | Hyun-Ju           | <b>Noh</b>           | Complex and varying lichen microbiomes according to vertical position of thallin in <i>Cladonia gracilis</i> from King George Island, Antarctica              | P-A-15 |
| 16        | Krzysztof         | <b>Romaniuk</b>      | Impact of human presence and activity on ecology and adaptation of an Antarctic psychrophilic bacteria communities  | P-A-16 |
| 17        | Carolina          | <b>Voigt</b>         | Climate feedback of arctic ecosystems: Warming enhances nutrient turnover and alters carbon and nitrogen flux dynamics in subarctic tundra                    | P-A-17 |
| 18        | Jana              | <b>Vořišková</b>     | Microbial community responses to future climate change and seasonal variation in Arctic tundra soil   | P-A-18 |
| 19        | Maya              | <b>Bar Dolev</b>     | An antarctic sea ice bacterium that uses an Ice Binding Protein to adhere to ice  | P-C-01 |
| 20        | Miloř             | <b>Barták</b>        | Resistance of Antarctic <i>Nostoc</i> sp. colonies to dehydration assessed by chlorophyll fluorescence parameters and spectral reflectance                    | P-C-02 |

|    |           |                             |   |        |
|----|-----------|-----------------------------|---|--------|
| 21 | Peter     | <b>Convey</b>               | Do <i>Chlorella</i> strains respond differently to temperature stress across a global gradient?   | P-C-03 |
| 22 | Fariha    | <b>Hasan</b>                | Isolation and some unique physiological characteristics of psychrotropic fungi from Passu Glacier, Pakistan   | P-C-04 |
| 23 | Tyler     | <b>Kohler</b>               | Biotic and abiotic controls of the elemental and isotopic composition of microbial communities in McMurdo Dry Valley streams, Antarctica              | P-C-05 |
| 24 | Anton     | <b>Kurakov</b>              | Characterization of plasmids and plasmid-encoded resistance genes found in permafrost <i>Acinetobacter iwoffii</i> strains                            | P-C-06 |
| 25 | Jana      | <b>Kvídlerová</b>           | Growth requirements of <i>Stichococcus</i> sp. strains isolated from Rhodope Mountains, Bulgaria  | P-C-07 |
| 26 | Yan       | <b>Liao</b>                 | Proteomics and genetics of Haloarchaea from deep lake, Antarctica   | P-C-08 |
| 27 | Phaik-Eem | <b>Lim</b>                  | Photosynthesis and genomic responses of <i>Chlorella</i> species from different geographical regions to artificial ultraviolet radiation (UVR) stress | P-C-09 |
| 28 | Oliver    | <b>Müller</b>               | Changes in structure, activity and metabolic processes of microorganisms in thawing permafrost soils from Svalbard                                    | P-C-10 |
| 29 | Felipe    | <b>Nóbrega</b>              | Prospection and desiccation tolerance of polar microorganisms   | P-C-11 |
| 30 | Ksenia    | <b>Novototskaya-Vlasova</b> | The molecular basis of thermostability of coldactive esterase from psychrotropic bacterium <i>Psychrobacter cryohalolentis</i> K5T                    | P-C-12 |
| 31 | Amedea    | <b>Perfumo</b>              | A single cell view of the growth of anaerobic bacterium <i>Clostridium psychrophilum</i> at subzero temperatures                                      | P-C-13 |
| 32 | Lada      | <b>Petrovskaya</b>          | New autotransporter from <i>Psychrobacter cryohalolentis</i> K5 <sup>T</sup> : characterization and construction of cell surface display system       | P-C-14 |
| 33 | Martina   | <b>Pichrtová</b>            | Desiccation stress and resistance in polar green algae of the genus <i>Zygnema</i>  | P-C-15 |
| 34 | Lenka     | <b>Procházková</b>          | Light and temperature dependence of photosynthesis in <i>Chlamydomonads</i> isolated from snow  | P-C-16 |
| 35 | Daniel    | <b>Remias</b>               | Significant cytological and physiological differences between two green algae causing red snow in the Alps  | P-C-17 |
| 36 | Carina    | <b>Rofner</b>               | Differential utilization patterns of dissolved organic phosphorus compounds by heterotrophic planktonic bacteria                                      | P-C-18 |
| 37 | Krzysztof | <b>Romaniuk</b>             | Adaptive features encoded within plasmids of arctic and antarctic <i>Psychrobacter</i> spp.   | P-C-19 |
| 38 | Roberta   | <b>Russo</b>                | Structural nad functional analysis of water-borne signaling protein pheromones from bipolar protist ciliate, <i>Euplodes petzi</i>                    | P-C-20 |
| 39 | Laura     | <b>Sanguino</b>             | Viral-host interactions in glacial ice and their adaptive significance  | P-C-21 |
| 40 | Iris      | <b>Schaub</b>               | Effect of prolonged darkness and temperature on the lipid metabolism in the benthic diatom <i>Navicula perminuta</i> from the Arctic                  | P-C-22 |
| 41 | Morten    | <b>Schostag</b>             | Microbial transcriptomic response to thawing and freezing of active layer permafrost soil   | P-C-23 |
| 42 | Purnima   | <b>Singh</b>                | Antifreeze protein activity in glacier cryoconites  | P-C-24 |
| 43 | Kateřina  | <b>Snopková</b>             | Cold-active antimicrobial agents produced by Antarctic pseudomonads   | P-C-25 |

|    |            |                       |  |        |
|----|------------|-----------------------|--|--------|
| 44 | .          | <b>Taha</b>           | Phylogenetic, structural and nucleic acid binding properties of a novel type of RNA-binding (TRAM) protein from an Antarctic archaeon.                       | P-C-26 |
| 45 | Susana     | <b>Vazquez</b>        | Crystal structure and expression of a putative phage-like protein coded in the genome of a marine Antarctic bacteria   | P-C-27 |
| 46 | James      | <b>Bradley</b>        | Microbial community dynamics in the forefield of glaciers – a modelling perspective  | P-D-01 |
| 47 | Beat       | <b>Frey</b>           | Microbial diversity of the cryosphere of the Damma glacier   | P-D-02 |
| 48 | Jan        | <b>Gawor</b>          | Arctic and Antarctic supraglacial bacterial diversity revealed by next generation metagenomics   | P-D-03 |
| 49 | Jarishma   | <b>Gokul</b>          | The biogeography of cryoconite bacterial communities on a High Arctic Ice Cap  | P-D-04 |
| 50 | Dorota     | <b>Górnjak</b>        | Bacterial community composition in various supraglacial habitats of Ecology Glacier (King George Island, Antarctica)   | P-D-05 |
| 51 | Jakub      | <b>Grzesiak</b>       | Microbial community changes along the Ecology Glacier ablation zone (King George Island, Antarctica)   | P-D-06 |
| 52 | Takumi     | <b>Murakami</b>       | Survey of the glacier invertebrates and their gut microbiota   | P-D-07 |
| 53 | Sabrina    | <b>Obwegeser</b>      | Cover up – coverage of glacial surfaces with industrial fleece to reduce ablation: economic blessing or ecological spell? A symbiosis of society and science | P-D-08 |
| 54 | Marie      | <b>Šabacká</b>        | The ecology and biogeochemistry of maritime Antarctica snow  | P-D-09 |
| 55 | Shiv Mohan | <b>Singh</b>          | Bacterial diversity and bio-potentials of Himalayan cryoconites, and its comparison with Arctic  | P-D-10 |
| 56 | Jun        | <b>Uetake</b>         | Bacterial diversity in tropical glacier and glacier foreland in Uganda   | P-D-11 |
| 57 | Alejandra  | <b>Urra</b>           | Investigation of the proglacial zone as a modulator for nutrient fluxes in ice sheet runoff  | P-D-12 |
| 58 | Jakub      | <b>Žarský</b>         | Greenland Ice Sheet as a model for microbial macroecology and evolution  | P-D-13 |
| 59 | Ioan       | <b>Ardelean</b>       | Biosynthesis of gold nanoparticles by a cryotolerant cyanobacterium isolated from Scarisoara Ice Cave (Romania)  | P-G-01 |
| 60 | Heida      | <b>Fridjonsdottir</b> | Bioprospecting psychrotrophic sphingomonads for hydrocarbon degradation  | P-G-02 |
| 61 | Maria      | <b>Papale</b>         | Polychlorinated biphenyl degrading bacteria from the Kongfjorden (Svalbard Islands, Norway)  | P-G-03 |
| 62 | Maria      | <b>Papale</b>         | Tolerance to heavy metals and polychlorinated biphenyl biodegradation potential by Arctic bacteria from continental Norway                                   | P-G-04 |
| 63 | Jeffrey    | <b>Vargas-Perez</b>   | Bioprospecting of antarctic microorganisms and their extremophiles enzymes applied in food industry (amylase)  | P-G-05 |

## Poster session B

| Poster No | Presenting author |                   | Title  |        |
|-----------|-------------------|-------------------|--|--------|
| 1         | Antonio           | <b>Alcamí</b>     | Biodiversity and distribution of polar freshwater viruses  | P-B-01 |
| 2         | Antonio           | <b>Alcamí</b>     | Ecological connectivity shapes viral assemblages and variability in Antarctic environments   | P-B-02 |
| 3         | Corien            | <b>Bakermans</b>  | Attempted isolation of Acidobacteria from Antarctic permafrost   | P-B-03 |
| 4         | Chris             | <b>Bellas</b>     | Virus genomes from glacial environments reveal novel virus groups with unusual host interactions   | P-B-04 |
| 5         | Amanda            | <b>Bendia</b>     | Microbial communities from geothermal sites of a polar active volcano (Deception Island, Antarctica)   | P-B-05 |
| 6         | Nadine            | <b>Borchhardt</b> | Biological soil crust algae in the polar regions – biodiversity, genetic diversity and ecosystem resilience under global change scenarios                        | P-B-06 |
| 7         | Heather           | <b>Buelow</b>     | Differential abundance and expression of Antarctic soil microbial communities: a metatranscriptomic analysis of taxonomic and functional diversity               | P-B-07 |
| 8         | Kelly             | <b>Chan-Yam</b>   | Characterization of microbial communities in water tracks in an Antarctic Dry Valley   | P-B-08 |
| 9         | Laurie            | <b>Connell</b>    | Fungal diversity in permanently ice covered Lake Fryxell, Antarctica   | P-B-09 |
| 10        | Antonella         | <b>Conte</b>      | Cultivable heterotrophic bacteria from Antarctic permafrost  | P-B-10 |
| 11        | Antonella         | <b>Conte</b>      | Experimental approach to the screening of prokaryotic assemblage in Antarctic permafrost   | P-B-11 |
| 12        | Silvia            | <b>Coria</b>      | Induction of multiple prophages from an Antarctic marine bacterium   | P-B-12 |
| 13        | Olga              | <b>Dagurova</b>   | Controlling factors on bacterial diversity and activity of the coastal water of Lake Baikal, Siberia   | P-B-13 |
| 14        | Ekaterina         | <b>Dambinova</b>  | Psychrophilic and psychroactive bacteria in cold springs of Northern Pribaikalie   | P-B-14 |
| 15        | Ekaterina         | <b>Durdenko</b>   | Halophilic aerobic microorganisms from Alyaska cryopeg   | P-B-15 |
| 16        | Diego             | <b>Franco</b>     | Microbial diversity and community composition across depth gradient in marine sediments from Admiralty Bay, King George Island and Bransfield Strait, Antarctica | P-B-16 |
| 17        | Chung Yeon        | <b>Hwang</b>      | Marine RNA virus communities of oceanic seawaters in the vicinity of the Antarctic Peninsula   | P-B-17 |
| 18        | Nataliia          | <b>Iakovenko</b>  | How unique are the micrometazoa of antarctic soils? The example of bdelloid rotifers   | P-B-18 |
| 19        | Corina            | <b>Ircus</b>      | Diversity of cultured ice cave microcosm   | P-B-19 |
| 20        | Ok-Sun            | <b>Kim</b>        | Comprehensive analysis of soil bacterial community structure in King George Island, Maritime Antarctica  | P-B-20 |
| 21        | Andrea            | <b>Kiss</b>       | Epi- and endophytic microbial communities of Arctic and subarctic peatland mosses  | P-B-21 |
| 22        | Kirill            | <b>Krivushin</b>  | Metagenomic insights into Antarctic Dry Valleys permafrost   | P-B-22 |
| 23        | Emanuele          | <b>Kuhn</b>       | Transportation and persistence of microbial cells in central West Antarctica   | P-B-23 |
| 24        | Manoj             | <b>Kumar</b>      | Biogeographical diversity of root associated microbial communities in arctic and alpine tundra areas   | P-B-24 |
| 25        | Hong Kum          | <b>Lee</b>        | Polar and Alpine Microbial Collection (PAMC): a culture collection dedicated to polar and alpine microorganisms  | P-B-25 |

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| 26 | Inae          | Lee                 | Genomic and phenotypic characterization of a thermophilic <i>Bacillus</i> sp. 9F isolated from deep-sea hydrothermal vent plume, Southern Ocean       | P-B-26 |
| 27 | Yung Mi       | Lee                 | Stratification of microbial community in marine sediments of the Ross Sea, Antarctica   | P-B-27 |
| 28 | Li            | Liao                | Bio-mining the actinobacterial treasures of the Arctic Ocean: diversity and genetic resources   | P-B-28 |
| 29 | Susanne       | Liebner             | Microbial abundance and methanotrophy in degrading subsea permafrost from the Laptev Sea shelf, Siberia   | P-B-29 |
| 30 | Evgeniya      | Matyugina           | Diversity and ecology of microorganisms from cold seeps of National park "Alkhanai" (Transbaikalia, Russia)   | P-B-30 |
| 31 | Viktoriya     | Oshurkova           | The search of methanogenic archaea in Arctic and Antarctic permafrost   | P-B-31 |
| 32 | Cristina      | Purcarea            | Prokaryotic community structure across the ice block of Scarisoara Cave determined by 454 pyrosequencing  | P-B-32 |
| 33 | Ana<br>Judith | Russi<br>Colmenares | Community composition, diversity and activity of N fixing cyanobacteria associated with mosses in sub-Arctic alpine ecosystems                        | P-B-33 |
| 34 | Iara          | Santiago            | Lichensphere: a protected natural microhabitat of the non-lichenized fungal communities living in extreme environments of Antarctica                  | P-B-34 |
| 35 | Tina          | Šantl-Temkiv        | Aerial transport of bacterial cells in the Arctic: sources, deposition and impact on atmospheric processes  | P-B-35 |
| 36 | Bjorn         | Tytgat              | Bedrock and biotic influence on community composition in soils from the Sør Rondane Mountains, East Antarctica  | P-B-36 |
| 37 | Bjorn         | Tytgat              | Biogeographic patterns in Antarctic lacustrine prokaryotes  | P-B-37 |
| 38 | Annick        | Wilmotte            | A plea for the creation of inviolate areas to protect reference areas for future microbiology research in Antarctica                                  | P-B-38 |
| 39 | Tina          | Wunderlin           | Bacterial geography of high altitude snow -comparing diversity in snow from Jungfrauoch (Switzerland) and Snowy Mountains (Australia)                 | P-B-39 |
| 40 | Soo<br>Jeong  | Yoon                | High occurrence of thermophilic bacteria isolated from hydrothermal vent plumes in Australian-Antarctic Ridge, Southern Ocean                         | P-B-40 |
| 41 | Marek         | Zdanowski           | Molecular characterization of miniature plasmids of Arctic psychrophilic bacteria of the genus <i>Variovorax</i>                                      | P-B-41 |
| 42 | Yinxin        | Zeng                | Diversity of <i>pufM</i> and <i>g5</i> genes in Bacterioplankton communities in coastal seawaters of Fildes Peninsula, King George Island, Antarctica | P-B-42 |
| 43 | Nathan        | Christmas           | The evolution of cold tolerance in cyanobacteria  | P-E-01 |
| 44 | Lubomír       | Kováčik             | Characterization of ten strains of filamentous cyanobacteria from the South Shetland Islands, Maritime Antarctica                                     | P-E-02 |
| 45 | Anna          | Patova              | Morphological and molecular characteristics of <i>Nostoc commune</i> Vauch. ex Born. & Flah. populations in mountain and Arctic habitats              | P-E-03 |
| 46 | Cristina      | Purcarea            | Diversity of phototrophic bacteria in Scarisoara Ice Cave   | P-E-04 |
| 47 | Ekaterina     | Pushkareva          | Impact of environmental factors on soil crust community in Svalbard   | P-E-05 |
| 48 | Lenka         | Raabová             | Thin and ubiquitous: taxonomic features of <i>Leptolyngbya</i> in Polar Regions   | P-E-06 |
| 49 | Annick        | Wilmotte            | A next-generation protocol for the assessment of cyanobacterial diversity   | P-E-07 |

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| 50 | Annick   | <b>Wilmotte</b>      | Baseline on cyanobacterial biodiversity of Svalbard assessed by pyrosequencing   | P-E-08 |
| 51 | Annick   | <b>Wilmotte</b>      | The BCCM/ULC culture collection to conserve, document and explore the polar cyanobacterial diversity                                 | P-E-09 |
| 52 | Olga     | <b>Baulina</b>       | The biodiversity and plasticity of symbiotic <i>Desmodesmus</i> spp. (Chlorophyceae) from a subarctic sea                            | P-F-01 |
| 53 | Kateřina | <b>Kopalová</b>      | Diatoms from the maritime Antarctica region; extreme endemism in Antarctica  | P-F-02 |
| 54 | Kateřina | <b>Kopalová</b>      | An intriguing species of <i>Eunotia</i> (Bacillariophyta) from Gough Island (Tristan da Cunha archipelago)                           | P-F-03 |
| 55 | Kateřina | <b>Kopalová</b>      | Revision of the genus <i>Nitzschia</i> in the maritime Antarctic Region  | P-F-04 |
| 56 | Kateřina | <b>Kopalová</b>      | The genus <i>Luticola</i> D.G.Mann (Bacillariophyta) from the McMurdo Sound Region, Antarctica, with description of four new species | P-F-05 |
| 57 | Ľubomír  | <b>Kováčik</b>       | Exposition of various stress conditions on filamentous green alga <i>Klebsormidium</i> (Streptophyta)                                | P-F-06 |
| 58 | Jana     | <b>Kvıderová</b>     | New record of cryoseston on Olympus Mt., Greece  | P-F-07 |
| 59 | Dial     | <b>Laughinghouse</b> | Unique diversity of marine microbial eukaryotes in the High Arctic   | P-F-08 |
| 60 | Roksana  | <b>Majewska</b>      | Epiphytic diatom communities from Terra Nova Bay and Cape Evans (Ross Sea) - a synthesis   | P-F-09 |
| 61 | Tomomi   | <b>Nakashima</b>     | Temporal and spatial variations in pigment compositions of snow algae in Mt. Tateyama in Toyama prefecture, Japan                    | P-F-10 |
| 62 | Linda    | <b>Nedbalová</b>     | Identity and ecophysiology of coccoid green alga dominating in ice-covered lakes on James Ross Island (NE Antarctic Peninsula)       | P-F-11 |
| 63 | Eveline  | <b>Pinseel</b>       | Hidden diversity: multiple Arctic and Antarctic lineages in the cosmopolitan diatom <i>Pinnularia borealis</i>                       | P-F-12 |
| 64 | David    | <b>Ryřánek</b>       | Diversity and spatial capacities of Arctic terrestrial algae   | P-F-13 |
| 65 | Klemens  | <b>Weisleitner</b>   | Advances in laser-induced fluorescence emission technology (L.I.F.E.) and preliminary microbial data from an Antarctic glacier       | P-H-01 |