

## MICROBIAL DIVERSITY 2017 –SCIENTIFIC PROGRAMME

**24 October 2017**

11:00 – 13:00

*Registration*

13:00 – 13:30

*Welcome introduction*

Rector of the University of Bari Aldo Moro, *Antonio Felice Uricchio*

Head of the Department of Soil, Plant and Food Sciences, *Teodoro M. Miano*

President of the SIMTREA, *Daniele Daffonchio*

Chairs of the Conference: *Fabio Minervini, Stéphane Chaillou*

13:30 – 14:15

*Keynote lecture: Mammals, Milk and Microbes – The role of milk in the establishment and function of the gut microbiome*

David A. Mills, University of California (Davis, USA)

**14:15 – 16:00**

**SESSION I: ANTHROPOGENIC PRESSURE AS A DRIVER OF MICROBIAL ECOSYSTEMS**

*Chairs: Pier Sandro Cocconcelli (Italy) and Daniele Daffonchio (Italy)*

14:15 – 14:45

*Plenary lecture: Abiotic and biotic drivers of microbial community structure and function in hot and cold desert soils*

Don A. Cowan, University of Pretoria (Pretoria, South Africa)

14:45 – 15:00

*Effects of plant-associated bacteria on the growth of their original host species and other plant species exposed to drought stress*

Iva Cholakova, Centre for Environmental Sciences, Hasselt University (Diepenbeek, Belgium)

15:00 – 15:15

*Influence of different water and crop residue management practices on methanogenic and methanotrophic microbial abundances in a temperate paddy soil*

Maria Alexandra Cucu, Dipartimento di Scienze Agrarie, Forestali e Alimentari (DISAFA), Università di Torino (Torino, Italy)

15:15 – 15:30

*Impact of baker's practices, terroir and wheat varieties on sourdough microbial taxonomic and functional diversity*

Elisa Michel, Oniris, Laboratoire de Microbiologie Alimentaire et Industrielle (Nantes, France)

15:30 – 15:45

*Cooperation and competition in milk environment: the evolutionary strategy of *Streptococcus thermophilus**

Giulia Della Scala, Dipartimento di Scienze per gli Alimenti, la Nutrizione, l'Ambiente (DeFENS), Università di Milano (Milano, Italy)

15:45 – 16:00

*Transcriptomic tracing the footsteps of deep sea bacteria in spoiled meat*

Rudi F. Vogel, Technische Universität München (Freising, Germany)

16:00 – 16:30

*Coffee break*

16:30 – 18:00

*Poster and Special session I (parallel) / Special Session I: Short presentations*

**Chairs: Maria De Angelis** (Italy) and **Danilo Ercolini** (Italy)

16:30 – 16:40

*Acidophilic prokaryotic diversity of acid mine drainage in Halıköy, Turkey*

Yağmur Toptaş, Eskisehir Osmangazi University (Eskisehir, Turkey)

16:40 – 16:50

*Microbial ecology of methylotrophs degrading tetramethylammonium in anaerobic conditions*

Giulio Moretti, Dipartimento di Medicina Clinica, Sanità Pubblica, Scienze della Vita e dell'Ambiente (MESVA), Università de L'Aquila (L'Aquila, Italy)

16:50 – 17:00

*Quantifying variability in growth kinetics of *Lactobacillus plantarum* and *Lactobacillus paracasei* technological and probiotic strains: a preliminary study*

Florence Postollec, ADRIA Food Technology Institute (Quimper, France)

17:00 – 17:10

*Bacteria associated to spontaneous plants in a historical PCB polluted soil show potential to sustain natural attenuation*

Lorenzo Vergani, Dipartimento di Scienze per gli Alimenti, la Nutrizione, l'Ambiente (DeFENS), Università di Milano (Milano, Italy)

17:10 – 17:20

*Arbuscular mycorrhizal fungi are spatially structured in a hot spot field site*

Luciano Avio, Istituto di biologia e biotecnologia agraria (IBBA), CNR (Pisa, Italy)

17:20 – 17:30

*Bioturbation impact on mangrove sediments bacterial microbiome*

Marco Fusi, King Abdullah University of Science and Technology (KAUST) (Thuwal, Kingdom of Saudi Arabia)

17:30 – 17:40

*Biotyping of acetic acid bacteria isolated from royal jelly and honey of common and ancestral honey bees suggests *Parasaccharibacter* strains as ancient honey bee symbionts*

Frank Jakob, Technische Universität München (Freising, Germany)

17:40 – 17:50

*Isolation, identification and characterization of yeasts from the gut of invasive hornet *Vespa velutina**

Francesco Vitali, Istituto di Biometereologia - CNR (Firenze, Italy)

17:50 – 18:00

*Effect of olive oil pomace dietary supplementation on rumen microbial community profile in Comisana ewes*

Francesco Pini, Dipartimento di Scienze delle Produzioni Agro-Alimentari e dell'Ambiente, Università di Firenze (Firenze, Italy)

19:00

*Welcome aperitive*



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**25 October 2017**

**08:30 – 11:30**

**SESSION II: FOOD MICROBES FACING THE CHALLENGES OF HEALTHY HUMAN NUTRITION**

*Chairs:* **Diego Mora** (Italy) and **Erasmus Neviani** (Italy)

08:30 – 09:00

*Plenary lecture: Implementation of natural competence and CRISPR-Cas9 technology in Lactococcus lactis*  
Peter Bron, NIZO food research (Ede, The Netherlands)

09:00 – 09:15

*Lactobacillus plantarum exerts in vitro anticancer activities by producing butyric acid: a genome-scale investigation behind this health-promoting metabolic pathway*  
Cristian Botta, Dipartimento di Scienze Agrarie, Forestali e Alimentari (DISAFA), Università di Torino (Torino, Italy)

09:15 – 09:30

*Community dynamics of spontaneous carrot juice fermentations and large-scale comparative genomics of selected isolates within the Lactobacillus plantarum group*  
Sander Wuyts, University of Antwerp (Antwerp, Belgium) and Vrije Universiteit Brussel (Brussels, Belgium)

09:30 – 09:45

*Diversity of yeast community composition in olive oil from two different areas in Tuscany*  
Michela Palla, Dipartimento di Scienze agrarie, alimentari e agro-ambientali, Università di Pisa (Pisa, Italy)

09:45 – 10:00

*High pressure homogenization and Lactobacillus paracasei A13: stress response and challenge to increase its functionality*  
Lorenzo Siroli, Dipartimento di Scienze e Tecnologie Agroalimentari, Università degli Studi di Bologna (Cesena, Italy)

10:00 – 10:15

*Mucin degradation by trophic consortia of infant gut microbes*  
Vera Bunesova, Laboratory of Food Biotechnology, Institute of Food, Nutrition and Health, ETH (Zurich, Switzerland)

10:15 – 10:45

*Coffee break*

10:45 – 11:30

*Keynote lecture: Mining functional diversity in metagenome*  
Douwe Molenaar, Vrije Universiteit Amsterdam (The Netherlands)

**11:30 – 13:15**

**SESSION III: RE-ASSEMBLED AND DRIVEN MICROBIAL COMMUNITIES OF COMPLEX ECOSYSTEMS**

*Chairs:* **Luc De Vuyst** (Belgium) and **Manuela Giovannetti** (Italy)

11:30 – 12:00

*Plenary lecture: Optimizing performance of bioprocesses through ecological engineering*

Kim Milferstedt, INRA, Laboratoire de Biotechnologie de l'Environnement (Narbonne, France)

12:00 – 12:15

*Decipher yeast-yeast interaction in oenological fermentation*

Thibault Nidelet, INRA, Sciences Pour l'Oenologie (Montpellier, France)

12:15 – 12:30

*Presence of foodborne pathogens and antibiotic resistant bacteria in fresh produce in Germany and the potential for use of bacteriophages for their control*

Charles Franz, Max-Rubner-Institut, Federal Research Institute of Nutrition and Food (Kiel, Germany)

12:30 – 12:45

*Design of bacterial consortia for fermentation of novel food mixing milk and lupin flour*

Valérie Gagnaire, INRA, Science et Technologie du Lait et de l'Œuf (Rennes, France)

12:45 – 13:00

*Rootstock shapes bacterial assemblage and networking in grape root system*

Ramona Marasco, King Abdullah University of Science and Technology (KAUST) (Thuwal, Kingdom of Saudi Arabia)

13:00 – 13:15

*Assessing inter-taxa correlations in microbial communities sampled through time. How to avoid the percentage-based cognitive illusion pitfall*

Andrea Squartini, Dipartimento di Agronomia Animali Alimenti Risorse Naturali e Ambiente (DAFNAE) Università di Padova (Legnaro, Italy)

13:15 – 14:30

Lunch

**14:45 – 16:30**

**SESSION IV: BREAKTHROUGHS IN UNRAVELING THE MICROBIAL CONSORTIA USING PAN-OMICS**

*Chairs: Stéphane Chaillou* (France) and **Rudi F. Vogel** (Germany)

14:45 – 15:15

*Plenary lecture: Unraveling the secrets of microbial life using omic technologies*

George Tsiamis, University of Patras (Patras, Greece)

15:15 – 15:30

*DAIRYdb: A manually curated gold standard reference database for improved taxonomic assignment of 16S rRNA gene sequences from dairy products*

Marco Meola, Agroscope, Research Group Fermentation Organisms (Bern, Switzerland)

15:30 – 15:45

*Dissection of gut metagenomes highlights a diet-induced selection of specific *Prevotella copri* strains*

Francesca De Filippis, Dipartimento di Agraria, Università di Napoli Federico II (Napoli, Italy)

15:45 – 16:00

*16S rRNA gene oligotyping reveals the correlation between food process and food quality*

Ilario Ferrocino, Dipartimento di Scienze Agrarie, Forestali e Alimentari (DISAFA), Università di Torino (Torino, Italy)

16:00 – 16:15

*Understanding meat spoilage using meaningful combinations of pan-omics methods*

Simon Poirier, INRA, MICALIS Institute (Jouy-en-Josas, France)

16:15 – 16:30

*NGS barcode sequencing for identification and diagnostics, an application in “Candida” pathogenic yeasts*

Gianluigi Cardinali, Dipartimento di scienze farmaceutiche - Microbiologia, Università di Perugia (Perugia, Italy)

16:30 – 17:00

Coffee break

17:00 – 18:50

Poster and Special session II (parallel) / Special session II: short presentations

Chairs: **Effie Tsakalidou** (Greece) and **Yu-Guang Zhou** (China)

17:00 – 17:10

*Coliform diversity in a drinking water distribution system*

Francois le Roux, Central University of Technology (Bloemfontein, South Africa)

17:10 – 17:20

*Antarctic brines: the discovery of a new habitat for eukaryotic microorganisms*

Ciro Sannino, Dipartimento di Scienze Agrarie, Alimentari ed Ambientali (DBVPG), Università di Perugia (Perugia, Italy)

17:20 – 17:30

*Survey on folate biosynthesis by Streptococcus thermophilus strains during milk fermentation*

Flavio Tidona, Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria, Centro di Ricerca Zootecnia e Acquacoltura (Lodi, Italy)

17:30 – 17:40

*Traditional Mountain cheese microbiota and risk factors of metabolic syndrome*

Ilaria Carafa, Fondazione Edmund Mach (San Michele all'Adige, Italy)

17:40 – 17:50

*Investigation of probiotic properties of lactic acid bacteria strains isolated from some foods*

Murat Dogan, Istanbul Yeni Yuzyil University (Istanbul, Turkey)

17:50 – 18:00

*Insight on the responses of Listeria monocytogenes to combined effects of thermal treatment and terpenes (carvacrol and thymol)*

Chiara Montanari, Centro Interdipartimentale di Ricerca Industriale Agroalimentare, Università degli Studi di Bologna (Cesena, Italy)

18:00 – 18:10

*Characterization of lactic acid bacteria from Tarhana a traditional Turkish fermented food*

Kudret Ateş, Istanbul Aydin University (Istanbul, Turkey)

18:10 – 18:20

*Uncultured lactic acid flora of tchapalo processing revealed by 16S rRNA and shotgun metagenomic analysis*

Bedis Dridi, INRA, MICALIS Institute (Jouy-en-Josas, France)

18:20 – 18:30

*Lactobacillus rhamnosus UC 8490 mitigates antimicrobial resistant bacteria in cheese model*



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Claudia Cortimiglia, Università Cattolica del Sacro Cuore (Piacenza-Cremona, Italy)

18:30 – 18:40

*Probiotic potential of a Lactobacillus rhamnosus cheese isolate and its effect on the intestinal microbiota of healthy volunteers*

Kalliopi Rantsiou, Dipartimento di Scienze Agrarie, Forestali e Alimentari (DISAFA), Università di Torino (Torino, Italy)

18:40 – 18:50

*Sourdough microbiota and FODMAPS: How sourdough fermentation can help people with IBS?*

Leidiane A. Acordi Menezes, Federal University of Santa Catarina (Florianópolis, Brasil)

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20:15 GALA DINNER

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**26 October 2017**

**8:30 – 11:30**

**SESSION V: BIOGEOGRAPHY OF MICROBIAL CONSORTIA**

*Chairs:* **Luca S. Cocolin** (Italy) and **Pierre Renault** (France)

08:30 – 09:00

*Plenary lecture: Inter-species dependencies as drivers of microbial co-occurrence*

Kiran Raosaheb Patil, European Molecular Biology Laboratory (Heidelberg, Germany)

09:00 – 09:15

*Characterization of lactic acid bacteria isolated from the Georgian, yogurt-like Matsoni*

Miriam Zago, Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria, Centro di Ricerca Zootecnia e Acquacoltura (Lodi, Italy)

09:15 – 09:30

*Extracellular polymeric matrix in biocrusts: its role as a repository for essential exometabolites*

Roberto De Philippis, Dipartimento di Scienze delle Produzioni Agro-Alimentari e dell'Ambiente, Università di Firenze (Firenze, Italy)

09:30 – 09:45

*Mapping and predictive variations of soil microbial richness, bacterial and archaeal phyla across French national territory*

Sébastien Terrat, INRA, Agroécologie (Dijon, France)

09:45 – 10:00

*Ecology of plastic-degrading microorganisms isolated from an abandoned landfill*

Edoardo Puglisi, Università Cattolica del Sacro Cuore (Piacenza, Italy)

10:00 – 10:15

*Biology of the cosmopolitan hyperacidophilic archaeon Ferroplasma*

Peter N. Golyshin, School of Biological Sciences, Bangor University (Bangor, UK)

10:15 – 10:45

*Coffee break*

10:45 – 11:30

*Keynote lecture: Biogeography of soil microbial consortia*

Philippe Lemanceau, INRA, Agroécologie (Dijon, France)

**11:30 – 13:15**

**SESSION VI: TOWARDS THE EXPLORATION OF NEW NICHES AS RESERVOIRS OF MICROBIAL DIVERSITY**

**Chairs: Sergio Casella** (Italy) and **Olga Golyshina** (United Kingdom)

11:30 – 12:00

*Plenary lecture: Text-mining and ontologies: new approaches to knowledge discovery of microbial diversity*  
Claire Nedellec, INRA, Unité MalAGE (Jouy En Josas, France)

12:00 – 12:15

*Bacterial community shift in aerobic abattoir effluent bioreactors*  
Olga de Smidt, Central University of Technology (Bloemfontein, South Africa)

12:15 – 12:30

*Diversity of fungal communities in dead logs: effects of forest structure and substrate quality in four unmanaged Italian forests*  
Silvia Pioli, Facoltà di Scienze e Tecnologie, Libera Università di Bolzano (Bolzano-Bozen, Italy)

12:30 – 12:45

*Developmental stage and diet drive the bacterial community diversity in the food-waste reducing insect *Hermetia illucens* (L.)*  
Matteo Callegari, Dipartimento di Scienze per gli Alimenti, la Nutrizione, l'Ambiente (DeFENS), Università di Milano (Milano, Italy)

12:45 – 13:00

*Metabolism of fructophilic lactic acid bacteria isolated from the *Apis mellifera* L. bee-gut: zooming on the phenolic acids*  
Pasquale Filannino, Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (DiSSPA), Università di Bari Aldo Moro (Bari, Italy)

13:00 – 13:15

*Plant growth promoting bacteria: a sustainable tool to minimize water footprint in agriculture in arid and semi-arid zones*  
Sara Borin, Dipartimento di Scienze per gli Alimenti, la Nutrizione, l'Ambiente (DeFENS), Università di Milano (Milano, Italy)

**13:15 – 13:45**

*Concluding remarks and farewell*

14:00 – 15:00

Lunch