

June 23/25, 2022

Cortona, Italy

# Cortona Prokaryotes 2022

## Scientific Programme

Scientific Committee:

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*Prof. Renato Fani*

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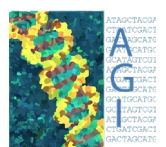
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## Thursday 23 June

11:00 **Lecture - Prof. Davide Zannoni "From early studies on electron transfer in bacteria to their present application in the formation of metal nanoparticles"**

### 12:00 **Min. Antibiotic resistance and new antimicrobials (I)**

12:00	12	Arianna Scardino	Bacteriophage-derived endolysins as novel strategy against Microbiologically Influenced Corrosion
12:12	12	Carla Condò	Antibacterial effect of new nanotechnological coatings approved for food contact
12:24	12	Daniela Sateriale	Antibacterial and antibiofilm efficacy of single and blended essential oils against important foodborne pathogens
12:36	12	Massimiliano Lucidi	The $\Phi$ 19606 bacteriophage contributes to colistin resistance in <i>Acinetobacter baumannii</i>
12:48	6	Lorenzo Caruso	Role of hydrogen sulfide in <i>Pseudomonas aeruginosa</i> antibiotic resistance and virulence

### 13:00 **Lunch**

### 14:00 **Min. Antibiotic resistance and new antimicrobials (II)**

14:00	12	Matteo Cervoni	Novel regulators of the phosphoethanolamine transferase gene eptA involved in colistin resistance in <i>Pseudomonas aeruginosa</i>
14:12	12	Tania Alonso-Vázquez	Metabolic consequences of antibiotic exposure in <i>Escherichia coli</i> and <i>Pseudomonas aeruginosa</i>
14:24	12	Valentina Pastore	Inhibition of colistin resistance in colistin resistant <i>Pseudomonas aeruginosa</i> strains

### 14:40 **Min. Virulence**

14:40	12	Alessandra Fortuna	Redundant DksA paralogs control virulence and oxidative stress response in <i>Pseudomonas aeruginosa</i>
14:52	12	Andrea Bonacorsi	Inhibition of bacterial adhesion: exploring the activity of PDSTP on the cystic fibrosis pathogen <i>Pseudomonas aeruginosa</i>
15:04	12	Cristina Bez	A novel cell-to-cell communication system based on a LuxR solo
15:16	12	Francesca Sivori	Role of extracellular DNA in dalbavancin activity against MRSA biofilms in patients with skin and soft tissue infections
15:28	12	Gianmarco Conte	Dissecting the interaction mechanisms between human dendritic cells (DCs) and <i>Pseudomonas aeruginosa</i> clinical variants in the pathogenesis of cystic fibrosis (CF)
15:40	12	Giulia Fanelli	Role of multidrug resistance efflux pumps during intracellular life of Adherent-Invasive <i>Escherichia coli</i> strain LF82
16:52	12	Valerio Baldelli	Characterization of novel <i>Pseudomonas aeruginosa</i> genetic determinants associated with persistent cystic fibrosis lung infections
16:04	6	Marta Mellini	A <i>Pseudomonas aeruginosa</i> quorum sensing signal mutant shows overly response to exogenous quorum sensing signal molecule
16:10	6	Chiara Tarracchini	Insight into biomarkers of Necrotizing Enterocolitis (NEC) development
16:16	6	Mihael Spacapan	Altruism and Locality of Quorum Sensing Bacteria

### 16:30 **Coffee Break**

### 17:00 **Min. Environmental microbiology**

17:00	12	Beatrice Valentini	The impact of wooded areas on yeast populations vectored by social wasps
17:12	12	Giorgia Novello	Climatic Zone and soil properties determine the biodiversity of the soil bacterial communities associated to native plant from Desert areas of North-Central Algeria
17:24	12	Lapo Doni	Large-scale impact of the 2016 marine heatwave on potential pathogenic microbial communities of the great barrier reef
17:36	12	Matilde Ciani	Marine cyanobacteria as a tool for heavy metal biosorption
17:48	12	Melissa Bisaccia	Antarctic Marine Microorganisms: a Promising Source of Novel Enzymes and Bioactive Molecules
18:00	6	Giorgia Piccioni	Intensive swine farming: an hotspot for linezolid-resistant <i>Enterococcus faecalis</i> and <i>Enterococcus faecium</i>
18:06	6	Stefania Di Silvestro	Stress response and resistance mechanisms to metals in <i>Rhodococcus</i> spp. strains
18:12	6	Bernardo Barosa	The microbial diversity associated with the shallow-water hydrothermal vents of the Aeolian Archipelago, Italy

### 18:30 **Min. Plant-Microbes Interaction**

18:30	12	Asia Rosatelli	PAHs catabolism and PGP activity of bacteria associated to the phyllosphere of <i>Q. ilex</i> in urban environment: evidence in vivo and in silico
18:42	12	Eleonora Rolli	The plant "Cry-for-help" in polluted soil affects plant-microbe interactions
18:54	12	Claudia Petrillo	Microbial consortia as a strategy to reduce drought stress in <i>Spinacia oleracea</i>
19:00	6	Stefany Castaldi	Use of plant growth-promoting bacteria as eco-friendly strategies to defeat <i>Macrophomina phaseolina</i> , a destructive soybean fungal pathogen of global concern

## Friday 24 June

09:00

### Lecture - Prof. Frédéric Barras "A life paved of Fe-S clusters, their history, evolution and function"

09:45

Min.

### Genome evolution and HGT

09:45	12	Camilla Fagorzi	Unraveling the rhizobial epigenome and its influence on plant symbiotic interaction
09:57	12	Carla Calia	Identification and characterisation of multidrug-resistant and mobilizable plasmids colE1 (pST1030-2B) and IncR (pST1023)
10:09	12	Gaia Vertillo Aluisio	Genomic Analysis of <i>Streptococcus salivarius</i> 24SMBc and Its Inhibitory Activity against <i>S. pneumoniae</i> and <i>S. pyogenes</i> Strains
10:21	12	Lorenzo Colombini	The mobilome of probiotic <i>Lactobacillus crispatus</i> M247 includes Tn7088 a novel integrative and mobilizable element (IME) carrying a biosynthetic gene cluster for a class I bacteriocin
10:33	6	Christopher Riccardi	The robustness of bacterial core metabolism to growth at different temperatures

10:45

### Coffee Break

11:15

Min.

### Human Microbiota

11:15	12	Alessandra De Giani	Prebiotic effect of Maitake extract on a probiotic consortium and its ability to modulate a synthetic in vitro reconstructed gut microbiota
11:27	12	Alice Caramaschi	Effect of food supplements on gut microbiota in obese patients: preliminary results of zimba trial
11:39	12	Daniela Eletto	<i>Helicobacter</i> interaction with gastric milieu
11:51	12	Federico Fontana	Identification of bifidobacterial reference strains of the infant gut microbiota based on multi-omics characterizations
12:03	12	Leonardo Mancabelli	Mapping bacterial diversity and metabolic functionality of the human respiratory tract microbiome
12:15	12	Sofia Chioccioli	Faecal microbiome as determinant of the effect of diet on colorectal-cancer risk: comparison of red meat based versus pesco-vegetarian diets in rodent models
12:27	12	Vanessa Croatti	Vaginal <i>Lactobacillus</i> mode of growth influences anti-Candida activity
12:39	6	Adelaide Panattoni	Influence of delivery mode on the respiratory-tract microbiota in newborns
12:45	6	Chiara Argentini	Evaluation of modularity activities of <i>Lactobacillus crispatus</i> strains in the context of the vaginal microbiota
12:51	6	Giulia Alessandri	Exploring the species-level infant gut bacterial biodiversity through a meta-analysis and the formulation of an optimized culture medium

13:00

### Lunch

14:00

Min.

### Applied microbiology

14:00	12	Angelica Severino	<i>Pseudoalteromonas haloplanktis</i> TAC125 as host for the recombinant production of the hCDKL5-1 catalytic domain
14:12	12	Caterina D'Angelo	Characterization of a new anti-adhesive molecule from <i>Psychrobacter</i> sp. TAE2020
14:24	12	Eva Donini	Interaction between microorganisms and biochar to pave the way for sustainable treatment strategies of contaminated waters
14:36	12	Fanny Claire Capri	<i>Actinomycetes</i> : a still-to-tap source of bioactive secondary metabolites
14:48	12	Matteo Calcagnile	Antibiotic production and morphological differentiation in <i>Nonomuraea gerenzenensis</i> are regulated by Rid7C, a novel endoribonuclease of the YjgF/YER057c/UK114 (Rid) protein family
15:00	12	Samuele Irudal	Identification of novel antigen candidates to develop a vaccine for <i>Burkholderia cenocepacia</i>
15:12	12	Teresa Faddetta	Novel bacterial biofertilizers promoting <i>Solanum lycopersicum</i> growth
15:24	12	Valeria Poscente	Combined action of mild heat and Origanum essential oil treatment on culturability and viability of <i>Escherichia coli</i> ATCC 25922 in vitro and in inoculated fruit juice
15:36	6	Daniele Vezzini	<i>Rhodococcus opacus</i> R7 transcriptomic analysis reveals sequences encoding laccase-like enzymes involved in polyethylene degradation
15:42	6	Francesca Formicola	Isolation and characterisation of bacterial strains with hydrocarbon degradation potential and plant growth-promoting activity for their application in bioaugmentation
15:48	6	Lara Mitia Castronovo	Development and in vitro Characterization of an mRNA Vaccine

16:00

### Coffee Break

16:30	Min.	Microbial genetics	
16:30	12	Anella Saggese	CotG of <i>Bacillus subtilis</i> controls spore permeability through its central repeats
16:42	12	Giovanni Di Gregorio Barletta	CotG controls spore surface formation in response to the temperature of growth in <i>Bacillus subtilis</i>
16:54	12	Davide Sorze	LysX2 is a <i>Mycobacterium tuberculosis</i> membrane protein with an extracytoplasmic MprF-like domain
17:06	12	Diletta Mazzantini	Toward the role of the flagellar MS-ring protein FlIF in <i>Bacillus cereus</i>
17:18	12	Sara Del Duca	Mimicking the early evolution through directed-evolution experiments: the gene elongation events leading to the hisF gene
17:30	12	Srikanth Ravishankar	Inhibition of curli gene expression by fluoronucleotides in <i>Escherichia coli</i> : the role of nucleotides pool and envelope stress
17:42	12	Zaccaria Marta	Functional cooperation of three non-essential proteins is required for <i>Escherichia coli</i> survival under cell envelope stress conditions
17:54	6	Giulia Capecci	Desiccation induces apparent death in the pathogenic bacterium <i>Acinetobacter baumannii</i>
18:00	6	Marco Coluccia	Functional analysis of the outer membrane protein CamA of <i>Shigella flexneri</i>
18:06	6	Laura Cioetto Mazzabò	Characterization of the activation process of the sigma factor $\sigma E$ regulatory network in <i>Mycobacterium tuberculosis</i> under stress conditions

18:15 **Lecture - Prof. Ines Mandic Mulec "The social life of *Bacillus subtilis* : kin discrimination and beyond"**

20:00 **Social dinner**

## Saturday 25 June

09:00 **Lecture - Prof. Douwe van Sinderen "Bifidobacteria as a model system for microbe-host interactions in the human gut"**

09:45	Min.	PhD day (I)	
09:45	12	Annalaura Paulis	In search of novel antiviral strategies: newly identified molecules induce type I Interferon expression through STING dependent pathway
09:57	12	Annapaola Petrosino	A potent orthogonal phage vector platform for targeted photodynamic therapy of Gram-negative bacterial pathogens
10:09	12	Angelica Pellegrini	CodY regulates virulence and metabolism in Group B <i>Streptococcus</i>
10:21	12	Federico D'Agostino	Identification of <i>Helicobacter pylori</i> cncR1 targetome through MAPS technology
10:33	12	Rita Trirocco	Fatty acids abolish <i>Shigella</i> virulence inhibiting its master regulator VirF

10:45 **Coffee Break**

11:15	Min.	PhD day (II)	
11:15	12	Bar Filosof	Vaginal immunization by an engineered <i>Streptococcus gordonii</i> expressing the <i>Chlamydia trachomatis</i> multivalent MOMP antigen CTH522
11:27	12	Gabriella Leccese	The effect of Probiotic strains in counteracting Adherent-Invasive <i>Escherichia coli</i> (AIEC) virulence and hampering the IL-23/Th17 axis in Inflammatory bowel disease (IBD) derived cells
11:39	12	Giulia Longhi	Tap water as a natural vehicle for microorganisms shaping the human gut microbiome
11:51	12	Sonia Renzi	The transition from a traditional to a Western lifestyle and its effect on the interrelation between diet, gut microbiome and health
12:03	6	Lisa Cangioli	Effect of Plant Probiotics and Biochar Application on Rhizosphere Biodiversity and Maize Growth in the Field
12:09	12	Matteo Selci	Natural hot springs as an environmental reservoir of multidrug-resistant potential pathogens
12:21	6	Filardi Rossella	Characterization of antibiotic-resistance phenotypic and genotypic traits in new isolates of <i>Akkermansia muiniphila</i>
12:27	6	Martinovic Andela	The ability of <i>Streptococcus thermophilus</i> BT01 to modulate urease activity in healthy subjects' fecal samples depends on biomass production process
12:33	6	Paolo Turrini	Taxonomic composition and metabolic potentials of a microbial community colonizing a pristine cave in West Papua, Indonesia
12:39	12	Viola Pavoncello	Control of the ydiL-O locus by a new anti-H-NS transcriptional regulator

13:00 **Lunch**

14:00	Min.	<b>PhD day (III)</b>	
14:00	12	Greta Segafreddo	Characterization of the ECF Sigma Factor C of <i>Mycobacterium tuberculosis</i> and of the protein Rv0093c as its putative anti-sigma factor
14:12	12	Morgana Letizia	PqsE expands and differentially modulates the RhIR quorum sensing regulon in <i>Pseudomonas aeruginosa</i>
14:24	6	Stefano Nenciarini	Strain level variation in yeast Extracellular Vesicles
14:30	Min.	<b>Prizes</b>	
<b>PREMIO SIMGBM</b>			
14:30	12	Francesco Riva	Antibiotic resistance spread mediated by horizontal gene transfer in the agri-food ecosystem
<b>PREMIO GENPROBIO 2022</b>			
14:42	12	Irene Artuso	Comparative genomics of <i>Aminobacter</i> species and <i>Acinetobacter baumannii</i>
<b>PREMIO FRANCO TATÒ</b>			
14:54	12	Andrés Andreo Vidal	Biosynthesis, self-resistance and regulation of glycopeptide antibiotics in producing actinomycetes
<b>PREMIO ALESSANDRO GALIZZI</b>			
15:06		Best oral presentation	