

#### THE FOCUS OF THE CONFERENCE WILL BE ON THE FOLLOWING THEMES:

1. METABOLIC COMPLEXITY OF AGRICULTURAL AND NATURAL ENVIRONMENTS
2. THE COMPLEXITY OF FOOD ECOSYSTEMS: PHYSIOLOGY OF SINGLE STRAINS IN PURE CULTURE VS. COMPLEX CONSORTIA
3. GENES AND FUNCTIONS IN COMPLEX MICROBIAL COMMUNITIES
4. NEW TOOLS AND STRATEGIES TO UNRAVEL THE COMPLEXITY OF MICROBIAL DIVERSITY
5. METAORGANISMS :FUNCTIONAL INTERDEPENDENCY OF MICROBIAL ASSOCIATIONS WITH PLANTS, ANIMALS AND HUMANS
6. BRINGING THE MICROBIAL COMPLEXITY IN THE INDUSTRIAL ENVIRONMENT

#### SCIENTIFIC COMMITTEE

GIANLUIGI CARDINALI University of Perugia (I)  
SERGIO CASELLA University of Padua (I)  
PIERSANDRO COCCONCELLI UCSC Piacenza (I)  
LUCA COCOLIN University of Turin (I)  
DANIELE DAFFONCHIO University of Milan (I)  
BERNARD DUJON Institut Pasteur (F)  
MARCO GOBBETTI University of Bari (I)  
PETER N. GOLYSHIN Bangor University (UK)  
NIKOLAS KALOGERAKIS Technical University of Crete (GR)  
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SYLVIE LORTAL INRA-Rennes (F)  
ERASMO NEVIANI University of Parma (I)  
PAUL W. O'TOOLE University College Cork (IRL)  
VINCENT ROBERT CBS Utrecht (NL)  
IAN DIRK VAN ELSAS University of Groningen (NL)  
RUDI VOGEL Technische Universität (D)

#### ORGANIZING COMMITTEE

GIANLUIGI CARDINALI University of Perugia (I) (Chair)  
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LUCA COCOLIN University of Turin (I)  
CLAUDIA COLABELLA University of Perugia (I)  
DE VINCENZI SERGIO University of Perugia (I)  
LAURA CORTE University of Perugia (I)  
MARCO GOBBETTI University of Bari (I)  
CECILIA LUCARELLI University of Perugia (I)  
ERASMO NEVIANI University of Parma (I)  
EMANUELE PITARI University of Perugia (I)  
LUCA ROSCINI University of Perugia (I)  
MATTEO TIECCO University of Perugia (I)

#### CONTACTS

**GIANLUIGI CARDINALI**  
gianluigi.cardinali@unipg.it

**LAURA CORTE**  
laura.corte@unipg.it

## FIRST ANNOUNCEMENT



#### SIMTREA

ITALIAN SOCIETY OF AGRO-FOOD AND ENVIRONMENTAL MICROBIOLOGY  
SOCIETÀ ITALIANA DI MICROBIOLOGIA AGRARIA, ALIMENTARE E AMBIENTALE



IS ORGANIZING THE:

3<sup>RD</sup> INTERNATIONAL CONFERENCE  
ON MICROBIAL DIVERSITY:

# THE CHALLENGE OF COMPLEXITY 2015

SALA DEI NOTARI  
PALAZZO DEI PRIORI  
PIAZZA IV NOVEMBRE  
PERUGIA

CON IL PATROCINIO DI:



UNIVERSITÀ  
DEGLI STUDI  
DI PERUGIA

CON IL PATROCINIO DI:



LE UNIVERSITÀ  
PER EXPO 2015  
COMITATO SCIENTIFICO  
DEL COMUNE DI MILANO



**TUESDAY/OCTOBER 27**  
AFTERNOON

**WEDNESDAY/OCTOBER 28**  
ALL DAY

**THURSDAY/OCTOBER 29**  
MORNING

## TUESDAY/OCTOBER 27

\*TENTATIVE TITLES

14:00	14:15	WELCOME AND REGISTRATION
14:15	15:00	KEYNOTE LECTURE: "TAXONOMIC CONCEPTS AND PRACTICE WITH COMPLEX MICROBIAL COMMUNITIES" CLETUS P. KURTZMAN USDA-ARS (USA)
15:00	15:30	COFFEE BREAK
15:30	17:20	<b>SESSION I: METABOLIC COMPLEXITY OF AGRICULTURAL AND NATURAL ENVIRONMENTS</b>
15:30	16:00	PLENARY LECTURE: "THE SOIL-PLANT-BACTERIAL-FUNGAL NETWORK*" IAN DIRK VAN ELSAS UNIVERSITY OF GRONINGEN (NL)
16:00	17:20	SELECTED LECTURES (4)
17:20	18:30	POSTER AND SPECIAL SESSION I (PARALLEL) / SPECIAL SESSION I: RESULTS OF SELECTED NATIONAL AND EU PROJECTS

## WEDNESDAY/OCTOBER 28

8:30	10:20	<b>SESSION II: THE COMPLEXITY OF FOOD ECOSYSTEMS: PHYSIOLOGY OF SINGLE STRAINS IN PURE CULTURE VS. COMPLEX CONSORTIA</b>
8:30	9:00	PLENARY LECTURE: "SPATIAL DISTRIBUTION AND MICROENVIRONNEMENT OF LAB COLONIES IMMOBILISED IN CHEESES*" SYLVIE LORTAL INRA - RENNES (F)
9:00	10:20	SELECTED LECTURES (4)
10:20	10:40	COFFEE BREAK
10:40	11:25	KEYNOTE LECTURE: "MICROBIAL NETWORKS AND METABOLIC FLUXES IN FOOD FERMENTATIONS*" RUDI VOGEL TECHNISCHE UNIVERSITÄT MÜNCHEN (D)
11:30	13:20	<b>SESSION III: GENES AND FUNCTIONS IN COMPLEX MICROBIAL COMMUNITIES</b>
11:30	12:00	PLENARY LECTURE: "METAGENOMICS OF POLLUTANT AND OIL BIODEGRADATION*" PETER N. GOLYSHIN BANGOR UNIVERSITY (UK)
12:00	13:20	SELECTED LECTURES (4)
13:20	14:30	LUNCH
14:30	16:20	<b>SESSION IV: NEW TOOLS AND STRATEGIES TO UNRAVEL THE COMPLEXITY OF MICROBIAL DIVERSITY</b>
14:30	15:00	PLENARY LECTURE: "BIOINFORMATIC TOOLS FOR THE INTERPRETATION OF COMPLEX BIODIVERSITY DATA *" VINCENT ROBERT CBS - UTRECHT (NL)
15:00	16:20	SELECTED LECTURES (4)
16:20	16:40	COFFEE BREAK
16:40	17:20	PRESENTATION AWARD WINNING POSTERS
17:20	18:30	POSTER AND SPECIAL SESSION II (PARALLEL) / SPECIAL SESSION II: YOUNG RESEARCHERS PRESENTATIONS

## THURSDAY/OCTOBER 29

8:30	10:20	<b>SESSION V: METAORGANISMS :FUNCTIONAL INTERDEPENDENCY OF MICROBIAL ASSOCIATIONS WITH PLANTS, ANIMALS AND HUMANS</b>
8:30	9:00	PLENARY LECTURE: "HUMAN MICROBIOTA AND HEALTH*" PAUL W. O'TOOLE UNIVERSITY COLLEGE CORK (IRL)
9:00	10:20	SELECTED LECTURES (4)
10:20	10:40	COFFEE BREAK
10:40	11:25	KEYNOTE LECTURE: "GENETIC BASES OF MICROBIAL DIVERSITY*" BERNARD DUJON INSTITUT PASTEUR (F)
11:30	13:20	<b>SESSION VI: BRINGING THE MICROBIAL COMPLEXITY IN THE INDUSTRIAL ENVIRONMENT</b>
11:30	12:00	PLENARY LECTURE: "INTEGRATING MICROBIOLOGY AND ENGINEERING FOR BIOREMEDIATION *" NIKOLAS KALOGERAKIS TECHNICAL UNIVERSITY OF CRETE (GR)
12:00	13:20	SELECTED LECTURES (4)
13:20	13:30	FAREWELL - END OF THE CONFERENCE

### CONFERENCE RATIONALE AND GENERAL PURPOSE

After the success of the 2nd International Conference on Microbial Diversity: 2013- Microbial Interactions in Complex Ecosystems, SIMTREA is glad to launch the third edition of the conference titled: "The challenge of Complexity". The meeting aims to gather scientists in the fields of agricultural, environmental and food microbiology in order to promote discussion and exchange of information and experiences regarding the complexity intrinsic in microbial biodiversity. Biology has long been defined the science of complexity for the wealth of relationships among organisms and between the biotic and abiotic components of the environment. In this frame, the increasing awareness of the complexity involved in Microbial Diversity is fueled by unprecedented microbiological studies, innovative technologies in molecular biology and increasing data interpretation efficiency with bioinformatics tools. This perspective poses exciting challenges in terms of methods and substance, which constitute the two scientific standpoints of the MD2015 Symposium.

### -THE METHODOLOGICAL CHALLENGE

Microbiologists have used the pure culture approach since C.E. Hansen first introduced the technique more than 130 years ago. Now meta-genomics, meta-metabolomics and meta-proteomics allow for direct studies of communities alpha and beta diversity. These high-throughput techniques produce such a wealth of data per time that current analytical pipelines are often unable to keep thepace, calling for new interpretation approaches.

### -THE SUBSTANCE CHALLENGE

Microbial diversity is present and has an effective action in almost all types of environment, including human body, plant and animals, food, natural and agricultural environments, poses the challenge of a detailed description of the microbiomes and of their evolution over the time. The awareness of rapid microbial circulation poses a further challenge to elucidate this aspect, by comparing microbial diversity among different environments.