



## Scientific Program

### SUNDAY, 17 MAY 2015

- 17:00-17:30 **Welcome**  
Kornelia Smalla, Germany
- 17:30-18:05 **Opening Lecture**  
**Antibiotics at sub-inhibitory concentrations**  
Fernando Baquero, Spain
- 18:30-20:00 **Welcome Reception**

### MONDAY, 18 MAY 2015

#### SESSION I: EVOLUTION OF ANTIBIOTIC RESISTANCE

- Chair Jan Dirk van Elsas, The Netherlands
- 08:30 **Phylogenomic transduction networks reveal genetic barriers for phage-mediated lateral gene transfer**  
Tal Dagan, Germany
- 09:05 **Magnitude and determinants of plasmid transfer from exogenous donor strains to complex microbial communities**  
Barth F. Smets, Denmark
- 09:25 **The origin of Beta-lactamase encoding genes: Are we misannotating resistance genes using sequencing data in microbial ecology?**  
Lars Hanse, Denmark
- 09:45 **Insights into the resistome of bacterial communities from environments shaped by exceptional antibiotic selection pressures**  
Nachiket Marathe, Sweden
- 10:05 **Bacterial antibiotic resistance can be induced by disinfection byproducts via mutagenesis**  
Lu Lv, China
- 10:25-10:55 **Coffee Break**

**MONDAY, 18 MAY 2015****SESSION II: MOBILIZING ANTIBIOTIC RESISTANCE GENES THROUGH ANTHROPOGENIC USE OF ANTIBIOTICS**

Chairs Steve Djordjevic, Australia  
Amy Pruden, United States

10:55 **Xenobiotics, xenogenetics and evolution: Tracking antibiotic resistance from environment to clinic, and back again**  
Michael Gillings, Australia

11:30 **Class 1 integrons as markers of antibiotic resistance**  
Will Gaze, United Kingdom

11:50-13:00 Lunch Break

13:00 **Antibiotic use selects for strains with increased permissiveness for broad-host-range resistance plasmids within a local population**  
Holger Heuer, Germany

13:20 **Turn up the signal – wipe out the noise: Gaining insights into antibiotic resistance of bacterial communities using metagenomic data**  
Johan Bengtsson-Palme, Sweden

13:40 **Dissemination of tetracycline resistance genes from a conventional dairy farm via manure into field soil**  
Dana Elhottova, Czech Republic

14:00 **What's the road to resistance? 15 years of antibiotic molecules application to farm soil do not significantly increase resistance genes abundance.**  
Joseph Nesme, Germany



## MONDAY, 18 MAY 2015

### SESSION III: MOLECULAR STUDIES REVEAL LINKS BETWEEN THE HOSPITAL AND THE ENVIRONMENT

Chairs Lisa Durso, United States  
Will Gaze, United Kingdom

14:20 **The rifamycin antibiotic resistome**  
Gerry Wright, Canada

14:55 **Co-occurrence of antibacterial biocide, metal and antibiotic resistance genes in bacterial genomes and plasmids reveals novel insights in their co-selection potential**  
Chandan Pal, Sweden

15:15 **Phylogeny and comparative genomics unveil independent diversification trajectories of qnrB and genetic surroundings within Citrobacter sp.**  
Luísa Peixe, Portugal

15:35 **Exploiting unique molecular signatures created during the evolution of complex resistance regions to track imminent threats by multiple antibiotic resistant pathogens**  
Steven Djordjevic, Australia

15:55-16:25 Coffee Break

16:25-18:30 Poster Session I

**TUESDAY, 19 MAY 2015****SESSION IV: FATE AND EFFECTS OF ANTIBIOTICS IN THE AGRO-ECOSYSTEM**

Chair Kristian Koefoed Brandt, Denmark

08:30 **Antibiotic resistance gene discovery in the swine intestinal microbiome**  
Heather Allen, United States

09:05 **Manure fertilization increases resident antibiotic-resistant bacteria in soil**  
Nikolina Udikovic-Kolic, Croatia

09:25 **Antibiotic resistance gene concentrations in agroecosystems following beef manure or poultry litter deposition**  
Kimberly Cook, United States

09:45 **Fate and effects of veterinary medicines in soil**  
Jan Siemens, Germany

10:20-10:50 Coffee Break

**SESSION IV continued**

Chair Kimberly Cook, United States

10:50 **Antibiotics in plant agriculture**  
Fiona Walsh, Ireland

11:25 **Antibiotic resistant bacteria from livestock husbandry are released with biogas plant digestate into the environment**  
Stefanie P. Glaeser, Germany

11:45 **Metals as co-selective agents in soil bacterial communities**  
Kristian Koefoed Brandt, Denmark

12:05 **Transport of antibiotics in wastewater irrigated soil columns and their relation with the increase of resistance genes**  
Kathia Lueneberg, Mexico

12:25-13:25 Lunch Break



## TUESDAY, 19 MAY 2015

### SESSION IV continued

Chair Pascal Simonet, France

13:25 **Resistance and mobilome of fresh produce – the missing link**  
Ed Topp, Canada

14:00 **Antibiotics resistance genes and resistant bacteria within an eco-agricultural system**  
Hong Chen, China

14:20 **The role of wildlife in disseminating antibiotic-resistant bacteria to and from livestock facilities**  
Alan B. Franklin, United States

14:40 **Antibiotic resistance genes in manure-amended soil and vegetables at harvest**  
Min Qiao, China

15:00-15:30 Coffee Break

15:30-17:30 Poster session II

**WEDNESDAY, 20 MAY 2015****SESSION V: DISSEMINATION OF ANTIBIOTICS AND ANTIBIOTIC RESISTANCE GENES THROUGH AQUATIC ECOSYSTEMS/ SEWAGE TREATMENT PLANTS**

Chair Kaare Nielsen, Norway

- 08:30 **The contribution of the mobilome in the dissemination of antibiotic resistance in rivers, sediments and farm slurries**  
Elizabeth Wellington, United Kingdom
- 09:05 **Exploring plasmid-based dissemination of antibiotic resistance genes in environmental matrices**  
Xavier Bellanger, France
- 09:25 **Distribution and fate of antibiotic resistance bacteria and genes in enhanced anaerobic digestion of sewage sludge with microwave pretreatment**  
Juan Tong, China
- 09:45 **Transferable antibiotic resistance in rivers and estuaries**  
Isabel Henriques, Portugal
- 10:20-10:50 *Coffee Break*
- 10:50 **Antibiotic resistance genes in urbanizing watershed**  
Yong-Guan Zhu, China
- 11:25 **Multidrug-resistant human-associated bacteria from wastewater treatment plants and their receiving waters – Gulf of Gdańsk, Baltic Sea (Poland).**  
Ewa Kotlarska, Poland
- 11:45 **Determining the minimal selective concentrations of antibacterial agents in complex aquatic bacterial communities**  
Sara Lundström, Sweden
- 12:05 **Antibiotic resistance genes in sewage and related water environment**  
Tong Zhang, China

**WEDNESDAY, 20 MAY 2015**

12:40-13:40 Lunch Break

## SESSION V continued

Chair Helmut Bürgmann, Switzerland

- 13:40 **Wastewater irrigation increases abundance of antibiotic resistance genes and potentially harmful Gammaproteobacteria in soils from Mezquital Valley, Mexico**  
Elisabeth Grohmann, Germany
- 14:15 **Overview of meropenem and zinc resistance in biofilms: Rotating tubular reactors and river sediments in the River Tyne**  
Catherine Hands, United Kingdom
- 14:35 **Antibiotic resistance in Pristine Red Sea Brine Pools**  
Ali H A Elbeheri, Egypt
- 14:55 **Persistence of resistance genes in sewage canalization networks of metropolitan areas: relationship between antibiotic selective pressure and antibiotic resistance genes**  
Thomas Berendonk, Germany
- 15:15-15:45 Coffee Break
- 15:45 **Environmental pollution from antibiotic manufacturing creates hotspots for resistance development**  
Joakim Larsson, Sweden
- 16:20 **Microbial metabolic capabilities including antimicrobial biosynthesis during water infiltration revealed by metagenomic and transcriptomic analyses**  
Jörg Drewes, Germany
- 16:40 **Exploring the effects of anthropogenic pollution on the environmental resistome of rivers and agricultural soils in Central Mexico using microbiological and genomic approaches**  
Pablo Vinuesa, Mexico
- 17:00 **Temporal dynamics and source-to-tap connectivity in a surface-water fed drinking water distribution system**  
Helmut Bürgmann, Switzerland

**WEDNESDAY, 20 MAY 2015**

17:20-20:00 Free time

20:00-00:00 Conference Dinner

**THURSDAY, 21 MAY 2015****SESSION VI: MITIGATION STRATEGIES AND HOW TO EVALUATE THEM**

(Round table and Discussion groups)

**Chairs** Mark Ibekwe, United States  
Heike Schmitt, The Netherlands09:00 **Mitigation strategies for environmental sources of antibiotic resistance**  
Amy Pruden, United States09:35 **Artilyns: Highly effective antimicrobial enzymes with a low risk of resistance formation for targeted elimination of bacterial pathogens**  
Stefan Miller, Germany09:50 **Thermophilic anaerobic digestion: an effective approach for blocking both horizontal and vertical gene transfer pathways of antibiotic resistance genes**  
Min Yang, China10:05 **Specific in silico tools for the detection of acquired antibiotic resistance genes**  
Gisle Vestergaard, Germany10:20 **Discussion**

11:00-11:20 Coffee Break

11:20 **Closing Lecture – taking stock of ARGs as pollutants – past, now and future**  
Jim Tiedje, United States12:05 **Farewell and announcements**  
Kornelia Smalla, Germany