

**ANTibioticS and mobile resistance elements in WastEwater Reuse  
applications: risks and innovative solutions**

**H2020-MSCA-ITN-2015/675530 - ANSWER**



**Outreach Activity 1:  
"Café Scientifique Event"**

**ESR 1: Gianuario Fortunato**

**Universidade Catolica Portuguesa-UCP, Porto**



## Description

- Date of the event. **27/01/2018**
- Place where the event took place. **Elbsaloon, Dresden**
- Audience Details (number of participants, age, sex, etc.). **15 people, male and women, 23-30 years old**
- Description of the topic of your presentation. **Antibiotic resistance**

## Dissemination material distributed during the event

The poster is for a 'Café scientifique' event held at Elbsaloon in Dresden on January 27, 2018. The top section shows a group of people gathered around a table with coffee cups and laptops, with the text 'ANSWER' and the European Union flag. The main title 'Café scientifique Elbsaloon' is written in a large, elegant font, with the address 'Königsbrücker Str. 74, Dresden' below it. The date '27 January 2018' is prominently displayed. A central image shows a hand holding a globe of the Earth. A text box on the left lists the schedule and topics: a meeting at 17:45, start of the café at 18:00, and a main topic on antibiotic resistance. Logos for 'nereus COST ACTION' and 'COST' are visible at the bottom right, along with the URL 'http://www.answer.eu'.

ANSWER

Café scientifique  
Elbsaloon  
Königsbrücker Str. 74, Dresden

27 January 2018

17:45 Meeting at Elbsaloon, Königsbrücker Str. 74, Dresden  
18:00 Start of the café Scientifique

Main topic:

- Antibiotic resistance: a short introduction
- Water treatment and reuse around the world.
- A Meeting with.. the superbugs
- A "NERD" will introduce you to the molecular biology
- The crystal ball: as the mathematical model can predict the future
- Final brainstorming

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H2020-MSCA-ITN-2015/675530

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The climate change in combination and the overpopulation of the planet are leading to the rapid depletion of water resources. Therefore, the reuse of treated urban wastewater is considered as a suitable and reliable alternative for sustainable water management and agricultural development. The wastewater reuse practice has many benefits; however, there are major concerns that currently exist, related to the adverse effects of chemical and biological contaminants of emerging concern. The urban wastewater contains such a type of contaminants, among them contaminants such as antibiotics, antibiotic resistant bacteria, resistance genes and mobile antibiotic resistance elements. This type of contaminants is considered as a serious public health problem. ANSWER-ITN is a Marie-Curie project, created for tackling these problems. ESRs of this project are using innovative chemical, microbiological, toxicological and modeling tools, and novel process engineering. The project aim is to contribute to the understanding of the fate and transmission of antibiotics and resistance from wastewater to the environment and humans, through soil, groundwater and crops.



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Gianuario Fortunato

**ESR1: Measurement of the impact of antibiotic resistance (AR) discharge in wastewater and in soil: ecological aspects**

About me: Gianuario Fortunato received in 2012 a B.Sc. in Biology from the University of Bologna, Italy, and in 2015 an M.Sc. in Molecular and Cellular Biology from the same University. During the bachelor' and master's internship he worked on the extracellular bioreduction of tellurite by the photosynthetic bacterium *Rhodobacter caspulatus*. The main themes of his work was included the best metabolic conditions to allow the extracellular reduction of tellurite in native tellurium by *Rhodobacter*; a second part of this work was the determination of the tellurium nanoparticles by AFM (atomic force microscopy) and XPS (X-ray photoelectron spectroscopy). Now, he is a Ph.D. student at Universidade Catolica Portuguesa, and a Marie Curie Early-Stage Researcher at the ANSWER project. His work focuses on the measurement of the impact of antibiotic resistance discharge in wastewater and in soil: ecological aspects.

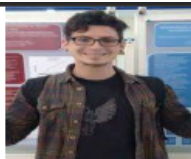




Aparna Chandrasekar

**ESR4: Modelling the dissemination of ARB&ARG from irrigation to ground/surface water**

About me: Aparna Chandrasekar received in 2013 a B.Sc. in Chemical Engineering from the B.M.S. College of Engineering, in India, and in 2015 an M.Sc. in Process Engineering, from Delft University of Technology (TU Delft), Netherlands, with an excellence scholarship from the Process Technology Institute at TU Delft. As part of her master thesis, she worked on wastewater treatment using banana peels for the removal of fluoride from wastewater. She also took up various challenging internships in the field of process engineering and product development at reputed companies, like Indian Oil Corporation, Oil and Natural Gas Corporation, and Technip B.V. Currently, she is a Ph.D. candidate at Technische Universität Dresden (TUD) and an Early-Stage Researcher of the ANSWER project. Her work focuses on the study of antibiotic-resistant bacteria in surface and groundwater.



Ioannis Kampouris

**ESR3: Effect of wastewater irrigation on the passage of ARB&ARG towards ground/surface waters**

About me: Ioannis Kampouris received in 2012 a B.Sc. in Biochemistry and Biotechnology from the University of Thessaly, Greece and in 2016 an M.Sc. in Applied Genetics and Biotechnology from Aristotle University of Thessaloniki, Greece. During the bachelor's thesis he analyzed polymorphisms in mitochondrial tRNA genes between normal individuals and patients with Alzheimer disease. During the master's thesis he was involved in a multi-disciplinary team project which consisted of chemical engineers, food technologists and biotechnologists. The primary goal of the project was the reduction of biofouling in membrane bioreactors. He conducted his master's thesis under the supervision of Prof. Petros Samaras and Prof. Minas Yiangou. The main theme of his master's thesis work included the isolation of a novel strain, from urban wastewater sludge, with high degrading ability of N-acyl-homoserine lactones and the utilization of the isolated strain for the reduction of biofouling in a pilot-scale membrane bioreactor. Now, he is a Ph.D. student at the Technische Universität Dresden, and an Early-Stage Researcher at the ANSWER project. His work focuses on the effect of wastewater irrigation on the passage of ARB&ARG towards ground/surface waters.



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## Photos of the event

The pics are in a google cloud: [https://drive.google.com/drive/folders/12D96VsP2l8\\_X07xga2KRAb2gnp-yZq2D](https://drive.google.com/drive/folders/12D96VsP2l8_X07xga2KRAb2gnp-yZq2D)

## Final Remarks

- The café Scientifique was a great success, we share our knowledge with young people. The most interesting part was the brainstorming, during this time the people interact with us with interesting question related to the antibiotic resistance.

