

the combined EURESTOP & STIMULUS



## Young Researchers & Innovators Forum

# Challenges and possibilities in the fight against antibiotic-resistant bacteria

15 & 16 February 2025

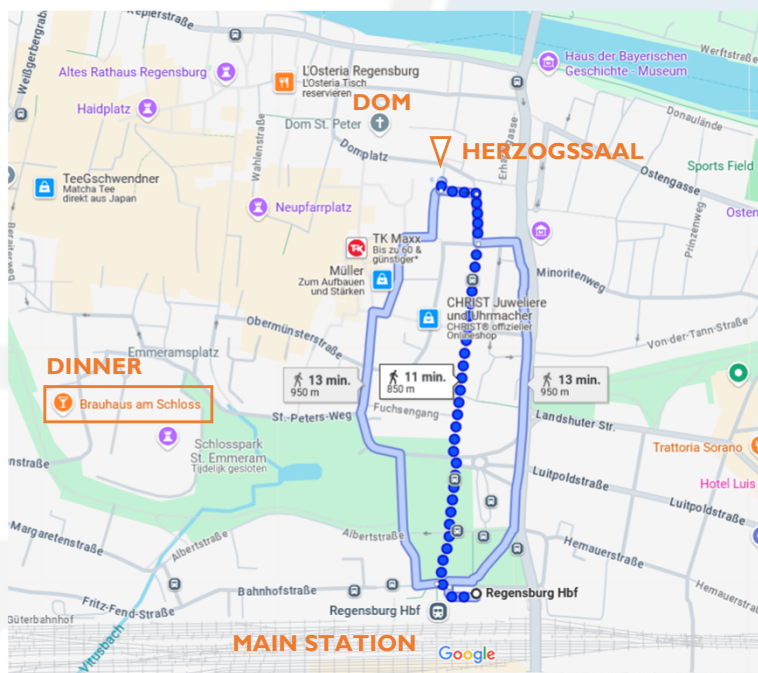


Local host: Martijn Riool (+31 – 6 48757801)  
Organizers: Amar Osmanovic & Didem Sen Karaman



## Location: Herzogssaal

Address: Domplatz 3, 93047 Regensburg



Building

Entrance



room 'Herzogssaal' is at 1<sup>st</sup> floor



# Program Saturday

## February 15: *Understanding the challenges of antibiotic resistance*

Time	Topic	Speaker / location
09:00 – 09:30	Registration & welcome with coffee	Foyer
09:30 – 09:45	Introduction YR&I Forum	Organizing committee
<i>Keynote:</i>		
<i>Clinical challenges of antibiotic resistance</i>		<i>Chair: Martijn Riool</i>
09:45 – 10:15	Global antimicrobial resistance	<b>Barbara Schmidt</b> University Hospital Regensburg (DE)
<i>Session 1:</i>		
<i>Genomic studies to unravel mechanisms (10+3 min)</i>		<i>Chair: Didem Sen Karaman</i>
10:15 – 10:30	Monitoring antimicrobial resistance mechanisms using whole genome sequencing	<b>Ricardo Oliveira</b> INIAV (PT)
10:30 – 10:45	Genetic basis for <i>in vivo</i> piperacillin-tazobactam resistance in <i>E. coli</i>	<b>Irene Molina Panadero</b> UPO (ES)
10:45 – 11:15	Coffee & tea break	Kapelle
<i>Session 2:</i>		
<i>STIMULUS – novel diagnostic tools</i>		<i>Chair: Nora Bastida Agote</i>
11:15 – 11:35	BOKU-style microscopy and holography to study bacteria and bacteria-surface interactions	<b>Erik Reimhult</b> BOKU University (AT)
11:35 – 11:50	Studying bacteria using digital holography	<b>Bhavana Sathish</b> BOKU University (AT)
11:50 – 12:05	Designing nanoparticles and responsive polymers for magnetically triggered drug delivery	<b>Giacomo Chizzola</b> BOKU University (AT)
<i>Session 3:</i>		
<i>"Rapid Fire" selected YR&amp;I (3+2 min)</i>		<i>Chair: Martijn Riool</i>
12:05 – 12:45	Templated bacterial cellulose A promising approach for antitumor therapy using 5,7-dihydroxyflavone-loaded magnetite nanoparticles coated through different strategies Antibiotic-loaded bone cement in the fight against antimicrobial resistant pathogens Light-activated nanomaterials: a strategy to combat staphylococcal biofilms Novel bacterial topoisomerase inhibitors: new kids on the block of antibacterial chemotherapy Microfluidics for studying microplastic influence on bacterial aggregation and antibiotic susceptibility	<b>Liam Hallinan</b> TU Darmstadt (DE) <b>Aynura Karimova</b> Baku State University (AZ)  <b>You Zhao</b> Regensburg (DE) <b>Katarina Bilska</b> Comenius University (SK) <b>Masa Zorman</b> University of Ljubljana (SI) <b>Triini Olman</b> Tallinn University of Technology (EE)

## Program Saturday

12:45 – 12:50	Group picture	Stairs
12:50 – 14:00	Lunch break	Weltenburger am Dom

### Session 4:

#### **STIMULUS presentations (10+3 min)**

Chair: **Aswathi Syam**

14:00 – 14:15	Polymeric carriers for third generation photosensitizers in antimicrobial photodynamic therapy of wounds	<b>Nicola Cusick</b> University of Siegen (DE)
14:15 – 14:30	Oleylamine-grafted hyaluronic acid nanoparticles for the detection of <i>S. aureus</i> bacteria	<b>Céline Feuilloley</b> University of Bath (UK)

### Session 5:

#### **Selected YR&I presentations (10+3 min)**

Chair: **Ellen Verheul**

14:30 – 14:45	Targeting enterotoxigenic <i>Escherichia coli</i> infections: focusing on fimbrial adhesion	<b>Ana Maria Da Silva Campos</b> National Institute for Agrarian and Veterinarian Research (PT)
14:45 – 15:00	Novel graphene quantum dots against <i>Candida auris</i> and <i>Candida albicans</i> species	<b>Laure van Hofwegen</b> Amsterdam UMC (NL)
15:00 – 15:15	Pre-clinical anti-biofilm and anti-quorum sensing studies of GQAS against multidrug-resistant <i>Pseudomonas aeruginosa</i> in open-wound infection	<b>Mohamed Abd El-Salam</b> University of Barcelona (ES)
15:15 – 15:30	Introduction of photodynamic treatment for treating orthopedic infections	<b>Raphaëlle Youf</b> University Hospital Regensburg (DE)
15:30 – 15:45	Selenoesters as adjuvants in the treatment of aminoglycoside-resistant staphylococcal infections	<b>Michal Dvořák</b> Uni. of Chemistry & Technology (CZ)

15:45 – 16:15	Coffee & tea break	Kapelle
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### Session 6:

#### **Career development**

Chair: **Amar Osmanovic**

16:15 – 16:50	Horizon Europe: Funding opportunities after you get your PhD	<b>Mikhail Antonkin</b> BayFOR (DE)
16:50 – 17:10	“My” ERC starting grant: A personal account & subjective reflections	<b>Holger Schönherr</b> University of Siegen (DE)
17:10 – 17:15	Closing day 1	Organizing committee
18:30	Group dinner	Brauhaus am Schloss

**February 16: *Promising solutions to combat antimicrobial resistance***

Time	Topic	Speaker / location
09:45 – 10:00	Registration & welcome with coffee	Foyer
<i>Session 7:</i>		
<b><i>Novel solutions (14+4 min)</i></b>		<i>Chair: Didem Sen Karaman</i>
10:00 – 10:20	<i>Beyond antibiotics: Harnessing cold plasma to combat superbugs in the post-antibiotic era</i>	<b>Utku Kürşat Ercan</b> <i>İzmir Katip Çelebi University (TR)</i>
10:20 – 10:40	Targeting the MEXC G-quadruplex to modulate the MEXCD-OPRJ efflux pump in <i>Pseudomonas aeruginosa</i>	<b>Martina Fiabane</b> <i>Siena (IT)</i>
<i>Session 8:</i>		
<b><i>Selected YR&amp;I presentations (10+3 min)</i></b>		<i>Chair: Laure van Hofwegen</i>
10:40 – 10:55	Culture and amplification-free nanopore sequencing for rapid detection of pathogens and antimicrobial resistance genes from urine	<b>Crystal Chapagain</b> <i>University of Inland Norway (NO)</i>
10:55 – 11:10	Novel bioactive glass S53P4 cream for prevention and treatment of implant-associated infection	<b>Deeksha Rajkumar</b> <i>Amsterdam UMC (NL)</i>
11:10 – 11:40	<i>Coffee &amp; tea break</i>	<i>Kapelle</i>
<i>Session 9:</i>		
<b><i>STIMULUS – novel antimicrobials</i></b>		<i>Chair: Giacomo Chizzola</i>
11:40 – 12:00	Persister cells and antimicrobial peptides	<b>Sebastian Zaat</b> <i>Amsterdam UMC (NL)</i>
12:00 – 12:15	<i>Candida albicans</i> and <i>Staphylococcus aureus</i> form polymicrobial infection: effects on antimicrobial activity of SAAP-148	<b>Gizem Babuccu</b> <i>Amsterdam UMC (NL)</i>
12:15 – 12:30	Real-time monitoring and on-demand release of antimicrobial peptide	<b>Mohadeseh Bagherabadi</b> <i>TU Darmstadt (DE)</i>
12:30 – 12:45	Composite hydrogels for chronic wounds treatment	<b>Nikitha Vavilthota</b> <i>Amsterdam UMC (NL)</i>
12:45 – 14:00	<i>Lunch break</i>	<i>Weltenburger am Dom</i>

Session 10:

**Selected YR&I presentations (10+3 min)**

- 14:00 – 14:15 Development of new bioconjugation strategies for sugar-based antipathogens and antigen mimetics
- 14:15 – 14:30 Neurosteroids modulate resistance in *Staphylococcus aureus*

Chair: Raphaëlle Youf

**Filippo Rambaldi**  
University of Florence (IT)

**Bára Křížková**  
Uni. of Chemistry & Technology (CZ)

Session 11:

**STIMULUS – academia & industry**

- 14:30 – 14:50 Wound infections – market solutions
- 14:50 – 15:05 Development of superabsorbent polymer dressings with improved functionalities for wound care
- 15:05 – 15:20 Development of novel pH-sensitive dyes for early-stage wound infection detection and monitoring

Chair: Nicola Cusick

**Markus Kettel**  
Paul Hartmann AG (DE)

**Nora Bastida Agote**  
Paul Hartmann AG (DE)

**Aswathi Syam**  
Atto-Tec (DE)

15:20 – 15:50 *Coffee & tea break*

*Kapelle*

Session 12:

**Selected YR&I presentations (10+3 min)**

- 15:50 – 16:05 A platinum butterfly effect: small changes turn a chemotherapeutic into a non-toxic metalloantibiotic with *in vivo* efficacy
- 16:05 – 16:20 Evaluation of antibiotic modulatory properties of some agricultural plant leaf extracts against resistant *Escherichia coli* strains
- 16:20 – 16:35 Repetitive combined doses of bacteriophages and gentamicin protect against *Staphylococcus aureus* implant-related infections in *Galleria mellonella*

Chair: Amar Osmanovic

**Çağrı Özsan**  
University of York (UK)

**Mikayel Ginovyan**  
Yerevan State University (AM)

**Gopala Mannala**  
University Hospital Regensburg (DE)

Session 13: **Scientific communication**

- 16:35 – 17:05 Induction heating to eradicate bacterial biofilms: *simple solution for a complex problem*
- 17:05 – 17:15 Closing remarks & award ceremony

Chair: Martijn Riool

**Ellen Verheul**  
Leiden UMC (NL)

Organizing committee