



Programme

Welcome and Introduction

Shalini Trefzer, Contributing Editor, Diplomatic Courier

Talks

Sven Panke (ETH Zurich)

Evolving new antibiotics

Irene Wüthrich (ETH Zurich)

The nanoFleming: Reinventing antibiotic discovery from soil microbiota

Peter Sander (University of Zurich)

Drug resistance mechanisms in and drug development for tuberculous and non-tuberculous mycobacteria

Silja Wessler (University of Salzburg)

Helicobacter pylori: paradigm for persistent infections as a global challenge

Gisbert Schneider (ETH Zurich)

Designing antimicrobial peptides

Q&A

Short Networking Reception

Social Media:

Twitter: @ETH_en

Facebook: @global.ethz.ch

#ETHZurich #BerlinSciWeek19

RETHINK Antibiotics

Thursday, 7 November 2019

16.00 h

Museum für Naturkunde, Tristan Lounge
Invalidenstraße 43, 10115 Berlin



Antibiotics play a pivotal role in medicine and public health. Since the discovery of penicillin, antibiotic agents have transformed medicine and saved millions of lives worldwide. The efficacy of the existing antibiotics therapies is threatened by the emergence of antibiotic resistance, with hundreds of thousands fatalities per year. Only few new antibiotics have been proven effective against multi-resistant bacteria, leading to an alarming situation where some infections have no cure. We are in urgent need of innovative antibiotic treatments. This symposium brings together leading experts from ETH Zurich and other institutions to present advances in the field of antibiotics.



Shalini Trefzer expands the business and reach of young and emerging companies of the future, from start-up to scale-up; most of whom are applying artificial intelligence to solve problems in various market segments. Originally from the US, she spent more than a decade working in San Francisco for companies such as Cisco Systems, before moving to Switzerland in 2008. There, she worked for six years as a corporate finance and operations professional in drug development, before branching off on her own into the field of AI-driven business applications. Shalini is honored to serve as the Executive Director of the Diplomatic Courier's World in 2050 Think Tank.



Sven Panke is a Professor of Bioprocess Engineering at the ETH Zurich. After his PhD, also at ETH, he worked for two years in the biocatalysis group of the Dutch chemical company DSM (Geleen, The Netherlands). He returned to ETH in 2001 as an Assistant Professor, received tenure in 2007, and then moved to the newly founded ETHZ Department of Biosystems Science and Engineering in Basel. His main research topics include biocatalyst engineering, high-throughput screening, and synthetic biology.



Peter Sander is a microbiologist at University of Zurich, Switzerland with a research focus on tuberculous and non-tuberculous mycobacteria. He addressed virulence mechanisms of *Mycobacterium tuberculosis*, investigated the mycobacterial lipoprotein synthesis pathway and made major contributions to the genetics of mycobacteria. He elucidated several innate and acquired drug-resistance mechanisms and moved on to combat mycobacterial pathogens by developing innovative vaccine candidates and drugs.



Gisbert Schneider is a full professor at ETH Zurich, holding the Chair for Computer-Assisted Drug Design. His research focuses on the integration of machine intelligence into practical medicinal chemistry. His career has led him from the pharmaceuticals division at Roche to academia, initially to the Goethe-University in Frankfurt where he held the Beilstein Endowed Chair for Chem- and Bioinformatics, and then to his current position at ETH in Zurich..



Silja Wessler studied Biology at the Free University of Berlin. She obtained her doctoral degree at the Max-Planck Institute for Infection Biology in Berlin and led a research group at the Paul-Ehrlich Institute in Langen. Since 2010 she is full Professor for Microbiology at the Paris-Lodron University Salzburg in Austria and investigates novel strategies to combat infections with the bacterial class-I carcinogen *Helicobacter pylori*.



Irene Wüthrich is the co-founder of SpheroBiotics, a start-up from ETH Zürich that leverages microbial communities as a source for novel antibiotics and live biotherapeutics to treat bacterial infections. Irene has a “Diplôme d'Ingénieur” and MSc in biotechnology from the Ecole Supérieure de Biotechnologie in Strasbourg, France, earned her PhD in molecular biology at the Whitehead Institute for Biomedical Research at MIT in Cambridge MA, USA, and is a synthetic biologist and Pioneer Fellow at ETH Zürich, Switzerland.