Antibiotics and Antibiotic Resistance Course

Monday April 15, 2024

Registration and Welcome

10:00	**Registration and poster mounting**
11:45-13:00	**Lunch**
13:00-14:00	**Welcome and one-minute introductions by course participants** Debra Milton, Umeå University, Sweden (NDPIA)

Introduction Lectures

Chairperson: Eva Garmendia, Uppsala University

14:00-14:45	**Resistance from a microbe perspective** Diarmaid Hughes, Uppsala University, Uppsala, Sweden
14:45-15:00	**Questions and discussion**
15:00-15:15	**Coffee**
15:15-16:00	**Clinical importance of resistance** Thomas Tängdén, Uppsala University and Uppsala University Hospital, Uppsala, Sweden
16:00-16:15	**Questions and discussion**
16:15-17:00	**Real world antibiotic resistance: *Mycobacterium tuberculosis*** Tone Tønjum, University of Oslo and Oslo University Hospital, Norway
17:00-17:15	**Questions and discussion**
17:15-18:00	**Break**
18:00-20:00	**Dinner**
20:00-20:45	**Social Mingle with snacks at the bar/lounge area**

Tuesday April 16, 2024

Communication and Outreach

Chairperson: Helen Wang, Uppsala University, Sweden

8:15-9:00 **Making sense of antibiotic resistance: Communicate for change**
Eva Garmendia, Uppsala University, Sweden

9:00-9:15 **Questions and discussion**

Modes of action and mechanisms of resistance of existing classes: Ribosomes

Chairperson: Helen Wang, Uppsala University, Sweden

9:15-10:00 **Ribosome structure and function**
Nora Vázquez-Laslop, Center for Biomolecular Sciences, University of Illinois at Chicago, USA

10:00-10:15 **Questions and discussion**

10:15-10:30 **Coffee**

10:30-11:30 **Antibiotics targeting ribosome subunits**
Nora Vázquez-Laslop, Center for Biomolecular Sciences, University of Illinois at Chicago, USA

11:30-11:45 **Questions and discussion**

11:45-13:30 **Lunch**

13:30-14:30 **Poster Session I**
Poster walks in groups in parallel (5 min presentation + 5 min questions)

14:30-15:15 **Free poster viewing of the "posters of the day"**

15:15-15:30 **Coffee**

Diagnostics and resistance detection

Chairperson: Carl-Fredrik Flach, CARe, University of Gothenburg, Sweden

15:30-16:15 **How to define clinical susceptibility for existing and new agents**
Gunnar Kahlmeter, Clinical Microbiology, Central Hospital and Head of the EUCAST Development Laboratory, Växjö, Sweden

16:15-16:30 **Questions and discussion**

16:30-17:15 **Rapid diagnostics – Antibiotic susceptibility testing**
Christer Malmberg, Gradientech AB, Uppsala Science Park, Sweden

17:15-17:30 **Questions and discussion**

17:30-18:00 **Break**

18:00-20:00 **Dinner**

Wednesday April 17, 2024

Modes of action and mechanisms of resistance of existing classes: Cell envelope

Chairperson: Debra Milton, Umeå University, Sweden

8:30-9:15	**Cell wall structure, biosynthesis, and targets** Mariana Pinho, Universidade NOVA de Lisboa, Portugal
9:15-9:30	**Questions and discussion**
9:30-10:15	**Novel lipoglycopeptide and lipopeptide antibiotics to overcome resistance** Nathaniel Martin, Leiden University, BE Leiden, The Netherlands
10:15-10:30	**Questions and discussion**
10:30-10:45	**Coffee**
10:45-11:30	**b-lactams, b-lactamases and b-lactamase inhibitors** Ørjan Samuelsen, University Hospital of North Norway, Tromsø, Norway
11:30-11:45	**Questions and discussion**
11:45-13:30	**Lunch**
13:30-14:30	**Poster Session II** Poster walks in groups in parallel (5 min presentation + 5 min questions)
14:30-15:15	**Free poster viewing of the "posters of the day"**
15:15-15:30	**Coffee**
15:30-16:15	**Efflux pumps and efflux pump inhibitors** Klaas Martinus Pos, Goethe University, Frankfurt, Germany
16:15-16:30	**Questions and discussion**

Modes of action and mechanisms of resistance of existing classes: Nucleic acids

Chairperson: Carl-Fredrik Flach, CARe, University of Gothenburg, Sweden

16:30-17:15	**Replication Inhibitors** Diarmaid Hughes, Uppsala Antibiotics Center, Uppsala University, Sweden
17:15-17:30	**Questions and discussion**
17:30-18:00	**Break**
18:00-20:00	**Dinner**

Thursday April 18, 2024

Genetics, selection and role of the environment

Chairperson: Helen Wang, Uppsala University, Sweden

8:30-9:15 **The role of the environment in evolution, transmission and surveillance of antibiotic resistant bacteria**
Carl-Fredrik Flach, CARe, University of Gothenburg, Sweden

9:15-9:30 **Questions and discussion**

9:30-10:15 **Mutations, selection (including co-selection), biological cost, compensation**
Diarmaid Hughes, UAC, Uppsala University, Sweden

10:15-10:30 **Questions and discussion**

10:30-10:45 **Coffee**

10:45-11:30 **Genetics behind antibiotic resistance**
Didier Mazel, Pasteur Institute, Paris, France

11:30-11:45 **Questions and discussion**

11:45-13:30 **Lunch**

13:30-14:30 **Poster Session III**
Poster walks in groups in parallel (5 min presentation + 5 min questions)

14:30-15:15 **Free poster viewing of the "posters of the day"**

15:15-15:30 **Coffee**

15:30-16:15 **Natural products**
Mark Brönstrup, Department of Chemical Biology, Helmholtz Centre for Infection Research, Germany

16:15-16:30 **Questions and discussion**

Human behaviour and antibiotic use

Chairperson: Eva Garmendia, Uppsala University

16:30-17:15 **Antibiotic use and behaviour modification (online lecture)**
Cecilia Stålsby Lundborg, Karolinska Institutet, Sweden

17:15-17:30 **Questions and discussion**

17:30-18:00 **Break**

18:00-20:00 **Course Dinner**

Friday April 19, 2024

Antibiotic development and alternative treatment strategies

Chairperson: Debra Milton, Umeå University, Sweden

8:30-9:15	**Phage therapy in practice** Martha Clokie, Centre for Phage Research, University of Leicester, UK
9:15-9:30	**Questions and discussion**
9:30-10:15	**Microbiome based strategies for decolonization of multidrug resistance and infection prevention** Reetta Satokari, University of Helsinki, Finland
10:15-10:30	**Questions and discussion**
10:30-10:45	**Coffee**
10:45-11:30	**Global pipeline for antibiotic development** Douglas Huseby, Uppsala University, Sweden
11:30-11:45	**Questions and discussion**
11:45-13:00	**Lunch**
13:00:13:30	**Concluding remarks, evaluation, and course certificates** Debra L Milton, Umeå University, Sweden (NDPIA)
14:00	**Departure** Bus to Arlanda airport Bus to Stockholm Central Station