



Target Audience
20 – 30 technicians, (molecular) biologists, medical microbiologists, bioinformaticians, hospital infections control experts, infectious disease epidemiologists and public health specialists with an interest in transmission dynamics are the target groups which would benefit most from this workshop.

Faculty Members
Jennifer Bender, Wernigerode, Germany
Yvette Bisselink, Groningen, Netherlands
Stephan Fuchs, Wernigerode, Germany
Hajo Grundmann, Freiburg, Germany
Sarah Klassen, Freiburg, Germany
Axel Kola, Berlin, Germany
Jacob Moran-Gilad, Beer Sheva, Israel
Silke Peters, Tübingen, Germany
Erwin Raangs, Groningen, Netherlands
Sandra Reuter, Freiburg, Germany
Sigrid Rosema, Groningen, Netherlands
John W. A. Rossen, Groningen, Netherlands
Birgit Strommenger, Wernigerode, Germany
Alan Walker, Aberdeen, United Kingdom
Sabine Weber, Freiburg, Germany
Guido Werner, Wernigerode, Germany

Contact

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Picture outside: Comparison of LPS loci and their chromosomal context in *Yersinia enterocolitica*. © Sandra Reuter
Picture inside: Screenshot of UK and Ireland EMRSA-15 in Microreact, a software for visualization of phylogenetic trees and their associated metadata. © Sandra Reuter



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ESCMID Postgraduate
Technical Workshop

**Capacity-Building
Workshop: Whole-Genome
Sequencing for Clinical
Microbiology and Hospital
Epidemiology**



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Organizers

- ESCMID Study Group for Epidemiological Markers – ESGEM
- ESCMID Study Group for Genomic and Molecular Diagnostics – ESGMD
- University of Freiburg Medical Center, Freiburg, Germany
- University Medical Center Groningen (UMCG), Groningen, Netherlands

Course Coordinators

- Alexander W. Friedrich, Groningen, Netherlands
- Hajo Grundmann, Freiburg, Germany
- Jacob Moran-Gilad, Beit Kama, Israel
- Sandra Reuter, Freiburg, Germany
- John W. A. Rossen, Groningen, Netherlands

Course Objectives
Next-generation sequencing (NGS) technology has developed rapidly during the last years. Innovative bench-top NGS platforms broaden application opportunities, especially for diagnostic use, epidemiological inference, and surveillance. The programme highlights opportunities and challenges posed by this technology. The workshop has been designed to boost practical knowledge exchange (with respect to both “wet-lab” and “e-lab”) as well as ample discussions with colleagues from all over Europe.

Course Programme

Tuesday, 10 October 2017

- 13:30

Registration and coffee
- 14:00

Opening of the course, welcome.
Hajo Grundmann
- 14:05

Next-generation epidemiology and infection prevention.
Jacob Moran-Gilad
- 14:30

Introduction of Illumina sequencing – theory.
Illumina representative
- 15:00

Coffee break
- 15:30

Data QC: introduction to basespace tools.
Illumina representative
- 16:00

Workshop: data QC – raw reads
Stephan Fuchs
- 16:30

Coffe break
- 17:00

Workshop: introduction to Artemis sequence viewer.
Sandra Reuter
- 18:00

Wrap up – questions of the day.
Illumina representative, Sandra Reuter, Stephan Fuchs
- 18:30

Keynote: detection of resistance genes – application of WGS and metagenomics.
Silke Peters

Wednesday, 11 October 2017

- 08:30

Workshop: data QC – assembly.
Stephan Fuchs
- 09:30

Coffee break
- 10:00

Aspects of library preparation.
Erwin Raangs
- 10:30

Workshop: DNA quantification.
Erwin Raangs, Sigrid Rosema, Yvette Bisselink, Sarah Klassen, Sabine Weber
- 11:30

Workshop: tagmentation & index PCR.
Erwin Raangs, Sigrid Rosema, Yvette Bisselink, Sarah Klassen, Sabine Weber, Stephan Fuchs
- 12:30

Lunch
- 13:30

Workshop: PCR cleanup.
Erwin Raangs, Sigrid Rosema, Yvette Bisselink, Sarah Klassen, Sabine Weber
- 14:30

Workshop: library normalization & pooling.
Erwin Raangs, Sigrid Rosema, Yvette Bisselink, Sarah Klassen, Sabine Weber
- 15:30

Coffee break
- 16:00

Wrap up – questions of the day.
Erwin Raangs, Sigrid Rosema, Yvette Bisselink, Sarah Klassen, Sabine Weber, Stephan Fuchs
- 16:30

Keynote: application of WGS in a routine diagnostic lab.
Axel Kola
- 17:15

Keynote: application of WGS in national health surveillance.
Guido Werner
- 18:30

Keynote: studying the intestinal microbiota – recent insights and pitfalls to be avoided.
Alan Walker

Thursday, 12 October 2017

- 08:30

Workshop: data QC – species ID.
Stephan Fuchs
- 09:30

Coffee break
- 10:00

Workshop: data analysis – MLST.
Jennifer Bender, Birgit Strommenger
- 11:00

Workshop: data analysis – resistance.
Sandra Reuter
- 12:00

Lunch
- 13:00

Workshop: data analysis – cgMLST and phylogenetics.
John W. A. Rossen
- 15:00

Coffee break
- 15:30

Wrap up – questions of the day.
Stephan Fuchs, Jennifer Bender, Birgit Strommenger, John W. A. Rossen
- 16:00

Keynote: personalized microbiology during outbreaks – unique markers and *in silico* screening approaches.
John W. A. Rossen
- 17:30

Social activity and dinner

Friday, 13 October 2017

- 08:30

Workshop: data analysis – own run.
Course participants
- 10:00

Coffee break
- 11:00

Workshop: data analysis – own run.
Course participants
- 12:30

Lunch break, departures

Organization

- Course Venue

Medical Center, University of Freiburg
Breisacher Strasse 115b
79106 Freiburg, Germany
- Registration Procedure

Register now online on the ESCMID website at www.escmid.org/education.
Registration deadline is 8 September 2017.
- Registration Fee

EUR 500 for ESCMID members
(Full Membership/Young Scientist Membership)
EUR 600 for all others

The fee includes the course, coffee, lunches and the social dinner. Travel and accommodation are not included.
- Attendance Grants

ESCMID provides a number of attendance grants for ESCMID “young scientist members”.
The grant covers the registration fee. Travel and accommodation are not included. Please apply via the ESCMID website at www.escmid.org/education before 18 August 2017. Applicants will be informed about their acceptance by 1 September 2017.
- CME Accreditation

The organizers of the course will apply for European CME accreditation through EACCME.

