

EUCIC Certificate Programme

Dynamics of disease transmission: from genomes to infection control

Münster, Germany
19 - 20 February 2026



Dynamics of disease transmission: from genomes to infection control

Münster, Germany



Faculty Members

Country	Name
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Bonn, Germany	Nico T. Mutters
Münster, Germany	Karola Prior
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Münster, Germany	Janina Treffon

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Day 1 Thursday, 19 February 2026

Basic principles of transmission and whole genome sequencing (WGS) analysis

Location: Multiscale Imaging Centre (MIC), Münster

Chair: Karola Prior & Dag Harmsen

08:30 – 09:00	Registration
09:00 – 09:15	Welcome and housekeeping Alexander Friedrich & Alexander Mellmann
09:15 – 10:00	Keynote: Prospective genomic surveillance in a university hospital setting Alexander Mellmann
10:00 – 10:45	Short- and long-read microbial WGS data generation: principles, throughput, and costs Karola Prior
10:45 – 11:15	Coffee break
11:15 – 11:45	Bacterial typing methods in the course of time Alexander Mellmann
11:45 – 12:15	Introduction to bacterial WGS data analysis Dag Harmsen
12:15 – 12:45	Hands-on: Analysis of a <i>Neisseria meningitidis</i> community outbreak Dag Harmsen, Annika Sobkowiak, Barbara Middendorf-Bauchart, Janina Treffon & Karola Prior
12:45 – 13:00	Hands-on: NCBI Genomes and SRA data download and ENA data submission Dag Harmsen, Annika Sobkowiak, Barbara Middendorf-Bauchart, Janina Treffon & Karola Prior
13:00 – 14:00	Lunch break
14:00 – 14:20	Quality control of WGS data Dag Harmsen
14:20 – 15:00	Hands-on: Analysis of a cross-border <i>Listeria monocytogenes</i> food-borne outbreak Dag Harmsen, Annika Sobkowiak, Barbara Middendorf-Bauchart, Janina Treffon & Karola Prior
15:00 – 15:30	Genomic nomenclature, thresholds for outbreak delineation, and confounders Dag Harmsen
15:30 – 16:00	Coffee break
16:00 – 16:55	Keynote: Where can artificial intelligence be used for microbial WGS? Adrian Egli
19:00	Dinner in Münster downtown

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Day 2 Friday, 20 February 2026

WGS tools and application examples

Location: Multiscale Imaging Centre (MIC), Münster

Chair: Janina Treffon & Alexander Mellmann (Münster, DE)

08:30 – 09:00	Keynote: Genomics applied for antimicrobial resistance (AMR) surveillance of environmental bacteria Nico T. Mutters
09:00 – 09:30	Live-demonstration of WGS data analysis with tools of the Center for Genomic Epidemiology (CGE) and Pathogenwatch online-services using <i>L. monocytogenes</i> outbreak data Karola Prior
09:30 – 10:00	Development of (real-time) PCR screening assays from WGS data Janina Treffon
10:00 – 10:30	Coffee break
10:30 – 11:00	Hands-on: Designing a screening assay with the WGS data of the cross-border <i>L. monocytogenes</i> outbreak Dag Harmsen, Annika Sobkowiak, Barbara Middendorf-Bauchart, Janina Treffon & Karola Prior
11:00 – 11:15	Live-demonstration of the CGE RUCS service for finding a screening assay with the WGS data of the cross-border <i>L. monocytogenes</i> outbreak Janina Treffon
11:15 – 12:00	AMR, mobile genetic element (MGE), and plasmid analysis of WGS data Alexander Mellmann
12:00 – 12:30	Hands-on: Analysis of a <i>bla</i>NDM-1 <i>Enterobacteriaceae</i> multi-species hospital outbreak with short-read sequencing data Dag Harmsen, Annika Sobkowiak, Barbara Middendorf-Bauchart, Janina Treffon & Karola Prior
12:30 – 13:00	Hands-on: Analysis of a <i>bla</i>NDM-1 <i>Enterobacteriaceae</i> multi-species hospital outbreak with long-read sequencing data Dag Harmsen, Annika Sobkowiak, Barbara Middendorf-Bauchart, Janina Treffon & Karola Prior
13:00 – 14:00	Lunch break
14:00 – 14:30	Live-demonstration of the BAKTA annotation online service and visualization of MGEs using the open source Easyfig tool Karola Prior
14:30 – 15:00	Accurate and reproducible whole genome genotyping for bacterial genomic surveillance with Nanopore sequencing data Karola Prior
15:00 – 15:30	Coffee break
15:30 – 15:45	Enabling rapid (supra)national cross-sectoral cluster detection through integrated molecular surveillance of pathogens: Introducing the miGenomeSurv network Dag Harmsen
15:45 – 16:45	Assessment (mandatory)
16:45 – 17:00	Q&A, conclusive remarks, and farewell Alexander Mellmann

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