BIODIVERSITY — DAY 1			
Time	**Activity Description**	**Intended Learning Outcomes** *After completion, trainees will (be able to):*	**Relevance** *Why this is important for you as:*
1540-1710	Biodiversity (Sylvain Brisse)	What are bacterial species? Principles and applications of bacterial strain nomenclatures Notions of horizontal gene transfer (HGT), recombination and mutation and their impact in species definition and intra-species diversity in the context of surveillance and outbreak control Gene-by-gene approaches for strain classification and subtyping	**Bioinformaticians** must grasp the complexities of bacterial species and their diversity, including concepts such as microbial taxonomy, and species definition, to analyze genomic data and identify bacterial strains using approaches like MLST and cgMLST. **Microbiologists** must understand principles and applications of bacterial strain nomenclatures, understanding intra-species diversity, clonality, and the notion of HGT to accurately classify and characterize bacterial populations for research and diagnostic purposes. **Epidemiologists** must comprehend the principle of the gene by gene approaches to classify strains into clusters, and use knowledge of MLST and cgMLST approaches to investigate outbreaks, track transmission routes, and assess the spread of antibiotic resistance within bacterial species.

Details

Biodiversity

This course will focus on the complexities of bacterial species and their diversity, exploring concepts such as microbial taxonomy and species definition. Additionally, they will learn about the principles and applications of bacterial strain nomenclatures, including intra-species diversity, clonality, and how horizontal gene transfer (HGT) is taken into account for classification purposes. The course will also cover the use of molecular typing techniques such as MLST and cgMLST for strain characterization.