



ANNOTATION AND ANALYSIS OF PROKARYOTIC GENOMES USING THE MICROSCOPE PLATFORM

INTER / INTRA

1. Objectives

Annotation and comparative analysis of bacterial genomes:

- acquire theoretical and practical knowledge of genome annotation tools (structural and functional annotation, metabolic networks annotation)
- interpret the results of functional annotation tools
- perform various comparative analyses : conserved synteny analyses, pan-genome, phylogenetic and metabolic profiles
- analyse the results of metabolic networks prediction tools and look for candidate genes for enzyme activities
- use the tools to analyse the genome(s) of interest of participants

2. Attendees

- Attendees : Engineers, researchers, experienced technicians from biological or medical research laboratories
- Pre-requisite : basic level in biology and computer skills

3. Price

- Price (excludes VAT) : 1 350 € per person (for academics) – 2500,00 € per person (for private companies) – 945 € (special offer for students, in the limit of available seats)

→ This training is dedicated to workers from various companies or could also be scheduled for workers from the same company or job seekers. Please contact our department about fees or quotations.

4. Organization

- Length : 4,5 days (Monday to Friday 12:30 AM)
- Dates: Mars the 16th, 17th, 18th, 19th and 20th 2020 (Deadline: February the 15th 2020)
- Inscription: <https://www.genoscope.cns.fr/agc/website/spip.php?article755>
- Timetable : 9H-17H30
- Training session location: Evry Val d'Essonne University
- Maximum number of trainees : 12

5. Programme

Introduction to annotation : <ul style="list-style-type: none"> ▪ Sequencing and annotation of microbial genomes ▪ Introduction to the MicroScope platform 	Syntactic and functional annotation : <ul style="list-style-type: none"> ▪ Gene prediction ▪ Similarity analyses using various public databases ▪ Prediction and usage of synteny groups ▪ Prediction of enzymatic functions
Expert annotation : <ul style="list-style-type: none"> ▪ Using the results of the different methods to improve annotation ▪ Annotating pseudogenes and fragments 	Comparative genomics : <ul style="list-style-type: none"> ▪ Synteny and phylogenetic profiles ▪ Region of genomic plasticity analysis ▪ Core/pan genome analyses
Bacterial metabolism : <ul style="list-style-type: none"> ▪ Databases on metabolism ▪ Reconstruction of metabolic networks ▪ Annotation and comparative analysis of metabolic pathwas 	

- Methods :
 - Lectures (50%) and hands-on (50%).
 - Each lecture is followed by computer-based exercises using the MicroScope bioinformatic platform.
 - Training course and documents are provided in English.
- Evry Val d'Essonne University shall hand over to each trainee a certificate attesting.