

## Environmental Meta-omics – Program

Tuesday April 9<sup>th</sup>

**From 14:00 to 16:00**

Metabolomics:

- Introduction to metabolomics with an overview of the role of primary and secondary metabolites modulated in different environmental factors.
- Description of the metabolomics workflow:
  - Sample collection and organization (harvesting, drying, extracting the material, preparing and purifying the sample for the analysis),
  - Pre-analytical procedures (*i.e.*, derivatization and separation),
  - Data acquisition using instrumentation applied in metabolomics studies (*i.e.*, GC-MS, LC-MS, and NMR),
  - Data analysis, metabolites identification and data submission to public repositories.

**From 16:00 to 18:00**

Metagenomics:

- Introduction to metagenomics (marker gene studies and whole-genome shotgun)
- Description of marker gene studies (metabarcoding) workflow:
  - Sample collection
  - DNA extraction
  - Marker gene selection and amplification
  - Sequencing
  - Bioinformatic and statistical data analysis

Wednesday April 10<sup>th</sup>

**From 14:00 to 16:00**

Metabolomics:

- Cases of study: analysis of grapevine leaf volatilome and metabolome.

**From 16:00 to 18:00**

Metagenomics:

- Cases of study: bacterial and fungal soil biodiversity in natural and agricultural environments.