**Web based platform for Structure and Functional -omics and Bioinformatics**

This project aims to develop a web-based bioinformatics platform for the organization and analysis of omics data, supporting applications in biotechnology, ecology, biomedicine, and the agri-food sector.

We aim to:

* **Develop a web-based platform** for the collection and integration of omics data from diverse resources and technologies, with the goal of constructing gene atlases that describe cellular responses across diverse biological systems (e.g., humans, animals, plants, and microbes) under various physiological or environmental conditions.
* **Design analytical pipelines** employing data mining and deep learning techniques to interpret high-dimensional and complex omics datasets. These tools will enable comparative analyses of molecular responses related to growth, development, and exposure to internal or external stimuli.
* **Incorporate AI-based tools** to extract insights from scientific publications and structured data, supporting automated knowledge discovery and hypothesis generation.

**Expected Results:**
The candidate will explore current available technologies for data management query and retrieval in bioinformatics, to implement the software infrastructure. The project will establish a computational framework to support scientists in identifying common or unique molecular features associated with diverse biological features based on user friendly web based graphical interfaces and a suitable query system.

**Main Outcome:**

Development of a web based platform suitable for data gathering and organization from omics datasets. This platform will support the scientific community and relevant stakeholders (e.g., in biotech, agriculture, and technology sectors) by enabling dedicated access to omics data through user-friendly queries and appropriate data retrieval methods and will be FAIR compliant to offer accessibility, interoperability and reuse of subsets of data resources made available.