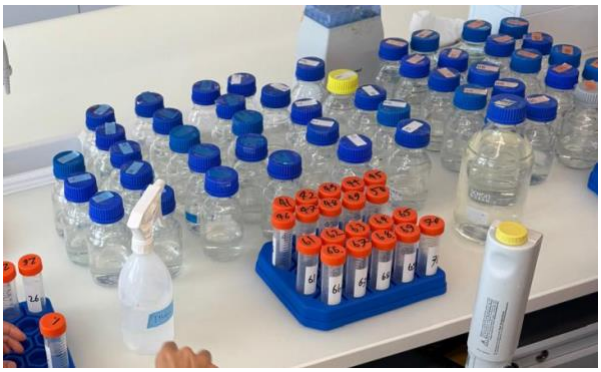
MSc/BSc Project Opportunity – 15 Years of Protist Experiments: Discover Emergent Ecological Patterns

We are seeking an enthusiastic MSc or BSc student with a passion for broad ecological questions and an interest in working with large datasets. The project will involve conducting reviews of the literature, interacting with experts, writing efficient code, and applying strong critical-thinking skills. This is an excellent opportunity for a motivated student to gain experience at the intersection of ecology, data science, and collaborative research.



You will analyze 15 years of videos of microcosms that have been produced to study species interactions and traits (Giometto et al. 2013, 2015), eco-evolutionary dynamics (Fronhofer & Altermatt, 2015, Govaert et al., 2020, Moerman et al. 2020), and meta-community and meta-ecosystem dynamics with resource flows and networks (Gounand et al., 2018, Harvey et al. 2016 , Giacomuzzo et al., 2025). The idea is to extract the controls from all these experiments, with standard conditions, and reanalyze all the videos. The goal is to identify emergent properties of these communities (which differ in species composition, type of container, and experiment length), with a particular focus on identifying the dominant species and understanding how dominance varies through time. This exceptional database of ecological experiments will allow us to find patterns that are impossible to detect with only one experiment (which is the case for most MSc theses).

The project involves planning and organization, as well as coding and analytical skills, and the curiosity to explore over a decade of ecological lab experiments. This may require cooperation with other scientists who used to be in the lab, which is a great opportunity to build connections in academia. Furthermore, you will be responsible for synthesizing and managing all the data using an R package and machine learning. In this project, you will

diversify your skills in research planning, conducting large analyses, communication, data analysis, and preparing a manuscript, with a rather theoretical focus.

Requirements: Interest in broad ecological questions, programming skills, English language skills, and a strong mathematical background. You can start at any time. We look forward to meeting you!

What you get out of this: Connections in academia; strong skills in coding and data management; quantitative ecological knowledge.

Contact/Supervision:

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