

Unravelling the complex relationship between plant physiology, phytoliths and the environment

1. Activity description

Phytolith studies are among the most reliable tools for reconstructing past vegetations and plant use. Phytoliths have been utilized to reconstruct historical flora composition, hypothesize paleo-climates, and enhance our understanding of human dietary evolution and food practices. However, our comprehension of phytolith formation and their role in plants remains incomplete, necessitating more **interdisciplinary work** and **experimental studies** to unravel the complex relationships between phytoliths, plants and the environment. This workshop aims to bring together researchers from various backgrounds to discuss how phytolith formation and deposition influence our reconstruction of past plant-people interactions. The goal is to advance the application of biosilica studies to better understand historical and archaeological agricultural systems.

Understanding past agricultural practices is crucial for addressing contemporary challenges, especially in the face of the global warming crisis that compels us to rethink our current food production methods. This interdisciplinary approach also encompasses the conservation of food crop heritage and diversity. The Institut d'Història of UPF emphasizes interdisciplinary and comparative studies in history, archaeology, and sociology, reflecting on the cultural influences that shape our identity, particularly regarding food consumption and adopted agricultural systems.

By incorporating an **eco-physiological perspective** on agricultural development, the workshop appeals to archaeologists interested in land-use, landscape evolution, food systems, and resource management. It provides a platform for bridging science and archaeology, showcasing collaboration potential across disciplines. The main objective is to create an interdisciplinary space to showcase some of the most innovative work on silicon in plants and crop physiology. This will help contextualise the archaeological research conducted at the UPF by the CASEs research group within the broader landscape of international studies on the same topic. The goal is to encourage participation in the discourse and foster new opportunities for collaboration.

2. Program 7th June 2024

Time (CET) Speaker

- 9:30 Welcome and introductory remarks
- 10-10:30 **Félix de Tombeur** - CNRS and Université de Montpellier
Why do plants silicify? Leveraging functional trait-based approaches to better understand plant silicon variation
- 10.30 -11 **Nannan Li** - Maynooth University
Phytoliths as a Promising Tool for Quantitative Reconstruction of Canopy Coverage in Subtropical Forests in China
- 11-11.30 **Rosa Maria Albert** – Univeristat Autònoma de Barcelona and ICREA
Phytoliths and other microarchaeological remains as a combined tool for understanding plant use and landscape conditions of past populations

11.30-12 Coffee break

12-12.30 **Oriol Andreu Diez** – Univeristat Autonomia de Barcelona
New methods to reduce the uncertainty in taxonomical identification of phytoliths. Ploidy influence on phytolith production

12.30-13 **Caspar Chater** – Kew Royal Botanic Gardens
Selecting and designing crops for a drier hotter world

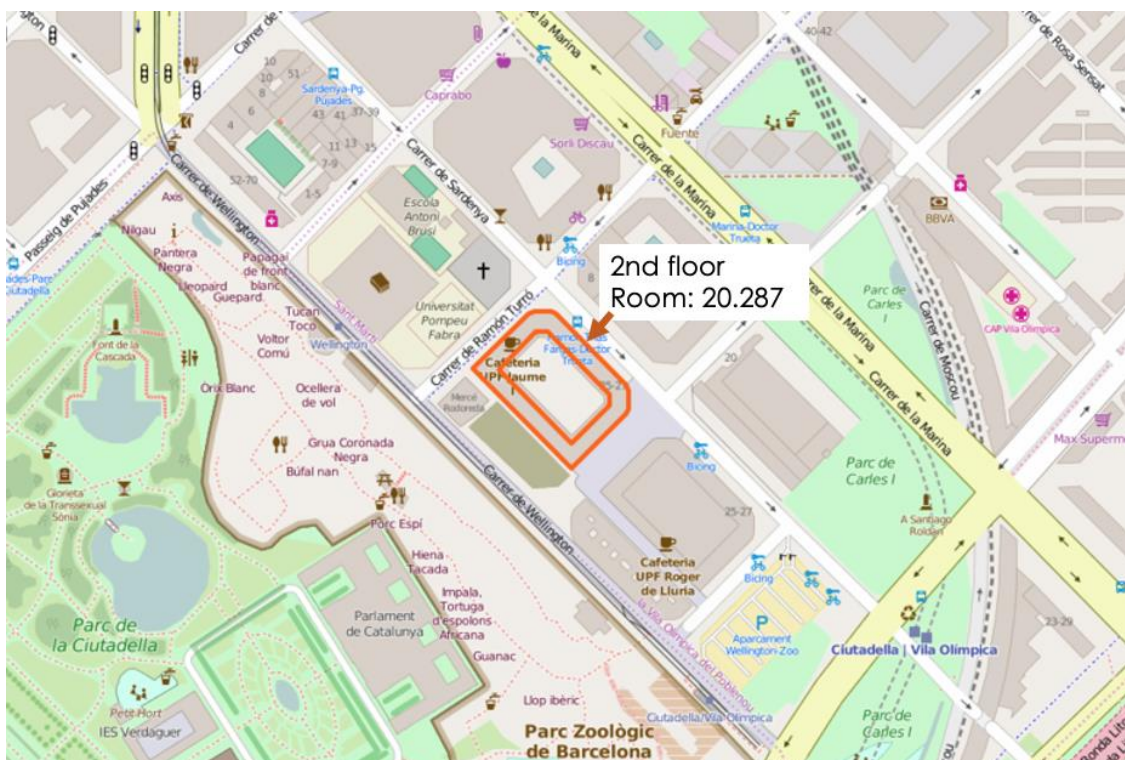
13-14.30 Lunch break

14.30 - 15 **Francesca D'Agostini** - Universitat Pompeu Fabra
Reconstructing past water management for drought resistant crops

15-16 Round table

3. Where?

Ramon Trias Fargas 25-27, 08005 (Barcelona)- Jaume I Building - 2nd floor - Room: 20.287



4. Link for registration and attending the workshop online:

<https://upf-edu.zoom.us/meeting/register/tJmldumsqj8iHd2wwBj5o0eCdG2s21bo6jJ1>