



**CONSTANCE CHOQUEL**

*From France to Sweden*



Project: **Marine Microorganisms as Bioindicators of Environmental Changes**

Research topic: **Ocean & Earth Sciences**

Swedish Institution: **Lund University**

French Institution: **Aix-Marseille University**

Dates of mobility: **13/10/2024 to 26/10/2024**

Program: **SFVE-A**



## PRESENTATION

Constance Choquel is a lecturer at the Mediterranean Institute of Oceanology (M.I.O) at Aix-Marseille University in France. Her research focuses on marine bioindicators, particularly benthic foraminifera—single-celled eukaryotes used for both recent and historical environmental reconstructions. Foraminifera serve as a valuable toolbox, integrating knowledge from various disciplines, including ecology, shell geochemistry, cell biology, and 3D morphometrics. For more information, please visit her personal website. Dr. Choquel earned her PhD in Marine Ecology from Angers University (France) and subsequently held a postdoctoral fellowship from the Carl Trygger's Foundation, working in the Department of Geology at Lund University.

## ACTIVITIES IN SWEDEN

These two weeks with Prof. Helena Filipsson have been highly productive, fostering the continuity of our collaboration. I contributed to the finalization of a funding application for a PhD student, submitted to the Swedish research council FORMAS as part of the DECOD project, which is led by Prof. Filipsson and includes Dr. Behnaz Pirzamanbien and Dr. Alexandros Sopasakis as collaborators. I also participated in discussions with the Infravis group, an expert team supported by Dr. Sopasakis from Lund's Department of Mathematics, who is helping us automate foraminifera segmentation following  $\mu$ CT scans at the SOLEIL Synchrotron. As part of the LINXS Environment and Climate team, I attended the SynchroMage Hackathon on 3D tomography and visualization. Furthermore, I participated in Dr. Alison Hsiang's lecture from Stockholm University on AI-driven advancements in automated foraminifera species recognition. This inspired me to begin Python-based machine learning work with Dr. Pirzamanbien from Lund's Department of Statistics to automate 3D segmentation of shell structures. I joined the LINXS Young Researchers' Symposium to deepen my understanding of proposal writing for synchrotron facilities. I will return to Lund in June 2025 as a visiting researcher invited by LINXS to present at a conference. Additionally, augmented reality images of foraminifera taken during the Hackathon are now published on my LinkedIn page and will be used to support educational activities for students at Marseille University.