

Position offered: 1+1 year post-doc grant (“assegno di ricerca”) at the Department of Earth Sciences of the University of Naples Federico II (Italy). Yearly salary (before taxes): 19.4k€ (roughly corresponding to a net salary of 17.5k€)

Requisites: A Phd in Earth Sciences, better if in any of the following disciplines: carbonate sedimentology, biostratigraphy, isotope stratigraphy, cyclostratigraphy, carbonate geochemistry

Topic: Marine benthic calcification across the major Mesozoic perturbations of the carbon cycle

Advisor: [Mariano Parente](#)

Research Programme

The post-doc researcher will contribute, together with one PhD student, 2 senior researchers and some MSc students, to the study of carbonate platform sections across the major Mesozoic perturbations of the carbon cycle. The project is part of a 3-years (November 2019–October 2022) national research project entitled “Biota Resilience to global change: biomineralization of planktic and benthic calcifiers in the past, present and future” (P.I.: Elisabetta Erba, University of Milan).

The Research Unit based in Naples will mainly work on the Triassic-Jurassic boundary and on the Lower Jurassic (with a major focus on the Pliensbachian–Hettangian and on the Toarcian Oceanic Anoxic Event), sampling new sections in southern Italy, Slovenia, Albania and Greece. We will also work on previously sampled sections across the Cretaceous OAE1a and OAE2, in cooperation with colleagues at the University of Ferrara.

For each studied section, the first phase of the project will involve a detailed sedimentological and stratigraphical study, based on the integration of the following datasets: facies and microfacies analysis; cyclostratigraphy and sequence stratigraphy; biostratigraphy; carbon isotope stratigraphy; strontium isotope stratigraphy. The stable isotopes of carbon (of carbonate and total organic matter) and oxygen will be analysed at external labs (University of Bochum and University of Lausanne) in the framework of a scientific cooperation established during previous research projects. Strontium isotopes and trace element concentrations will be analysed in the geochemistry labs at the Department of Earth Sciences of the University of Naples.

The second phase of the project will involve the quantitative analysis of the diversity and abundance of the biotic assemblages, with special emphasis on the main biocalcifiers. The third phase will involve the study of geochemical proxies of paleoenvironmental and paleoceanographic parameters, including: B isotopes as tracers of ocean pH, U isotopes as tracers of global ocean anoxia, Hg concentration as tracer of global volcanic activity; P content as tracer continental weathering intensity. Boron isotopes will be analysed at the geochemical laboratories of the Italian National Research Council (CNR) in Pisa (collaboration with Samuele Agostini and Irene Cornacchia). The Uranium isotopes of carbonates will be analysed at the Arizona State University (reference person: Ariel Anbar), in the framework of a scientific cooperation established for a wider project on related topics, which has been submitted for funding to the National Science Foundation of the United States. Hg and P concentration will be analysed at the University of Lausanne (collaboration with Thierry Adatte). The post-doc researcher will be responsible, along with the PhD student, for the preparation of the samples and will participate to the laboratory analyses at the University of Naples and, if needed, at the external labs cited above.

[Link to the call \(Rif.DiSTAR/2/2020\)](#)