Supervisor Project Idea

Supervisor

Insert a brief CV and/or external link, the total number of publications, the ORCID link, 5 of the most significant/recent publications, and a list of funded projects and awards. max 300 words

Alessandra Negri
Full Professor in Paleontology and Paleoecology.
Member of the Working group on Pleistocene Stratigraphy.
Member of the American Geophysical Union.
Member of International Quaternary Association.
Expert Involved in several research dealing with the study of Quaternary organic matter rich sediments (sapropels), interpreting data from all the proxies (from fossils to geochemistry) useful for understanding the origin of those objects whose history is intimately related to the Quaternary Paleoceanography and Paleoclimate.

- Orcid profile: https://orcid.org/0000-0002-8133-3936
- 131 publications (106 ISI- Scopus)
- Scopus Citations 2520, H-index 28
- Scholar Google Citations 3431, H-index 33 (http://scholar.google.it/citations);

i10-index= 76 with 3431 citations

5 most relevant publications

1) Capozzi R., Picotti V., Bracchi V.A., Caridi F., Sabbatini A., Taviani M., Bernasconi S., Negri A. 2024 (in press) Mid-Pleistocene Transition at a shallowing shelf: tectonic and eustatic forcings in the paleoenvironment of the Enza section, Northern Apennines mountain front Palaeogeography, Palaeoclimatology, Palaeoecology, https://doi.org/10.1016/j.palaeo.2024.112087
2) Mancini A.M., Lozar F., Gennari R., Capozzi R., Morigi C., Negri A.The past to unravel the future: Deoxygenation events in the geological archive and the anthropocene oxygen crisis 2024 Earth-Science Reviews, 249, art. no. 104664, DOI: 10.1016/j.earscirev.2023.104664
3) Mancini A.M., Gennari R., Lozar F., Natalicchio M., Della Porta G., Bernasconi D., Pellegrino L., Dela Pierre F., Martire L., Negri A. Sensitivity of the thermohaline circulation during the Messinian: Toward constraining the dynamics of Mediterranean deoxygenation 2024 Deep-Sea Research Part I: Oceanographic Research Papers, 203, art. no. 104217 DOI: 10.1016/j.dsr.2023.104217
4) Mancini, A.M.; Bocci, G.; Morigi, C.; Gennari, R.; Lozar, F.; Negri, A. Past Analogues of Deoxygenation Events in the Mediterranean Sea: A Tool to Constrain Future Impacts. *J. Mar. Sci. Eng.* 2023, *11*, 562.https://doi.org/10.3390/jmse11030562
5) Amezcua Buendia, R., Diamantini C., Potena D., Negri, A. BEyOND, a new tool for sapropel S1 studies in the Mediterranean sea. Alpine and Mediterranean Quaternary, 32 (2), 2019, 167 – 184DOI. /10.26382/AMQ.2019.11

Most recent projects

2024-2025 HISTORIAN **HI**gh-resolution **S**edimentary da**T**a f**OR** paleocl**I**m**A**te reco**N**struction
Bando a Cascata RETURN Spoke 8

2024-2026 Ammoniti di strada Contributi annuali - Legge 113/91 - D.D. 1662 del 22-10-2020 - PANN20_00742

2021-2022 *PNRA Call 2019 "Marine surveys in the Southern Ocean on the Italian vessel Laura Bassi in 2020- 2022"* Scientific responsible Polytechnic University of Marche Unit.

Research Group Description
Provide the name the reference department and a brief description of the research group, including external links, and available instrumentations and infrastructures. max 300 words

THE RESEARCH GROUP Sedimentology and Paleoecology

Research efforts of our research team are primarily concerned with sedimentary successions both in terms of textural characteristics and stratigraphic significance and of the presence of unicellular organisms and their consequent (paleo)ecological significance.

Currently, we are focusing on three main research fields: 1) Past Deoxygenation events and their significance as analogue of the modern situation 2) ecology and biodiversity of benthic and planktonic foraminifera 3) response of Foraminifera to environmental stress condition (i.e., lack of oxygen, acidification).
All these field are actively involved in the proposal.

The research group has a multidisciplinary expertise ranging from sedimentology and petrography to micropaleontology (calcareous nannofossils and Foraminifera) to Actuopaleontology. These proxies are basic tool for understanding and deepen the knowledge of the past.

The group has access to laboratory facilities, like sediment samples processing, a Mastersizer Malvern 3000 granulometer, High resolution Microscopy. Foraminifera culture work is carried out in one cell culture lab. International collaboration with Geochemistry experts (Dr. Gianluca Marino UVIGO) and other fossil groups (Prof F. Sangiorgi and Prof Timme Donders, UTRECHT University) relevant to the project permit to increase the pool of proxies used for the purpose and favour the scientific grow of the applicant**.**

Other members of the group are:

Anna Sabbatini PhD, Benthic foraminifera specialist
Francesca Caridi PhD, Benthic Foraminifera Specialist
Alan Maria Mancini PhD, Calcareous nannofossils and sedimentology specialist
Elisa Costanzi PhD student
Laura Bellentani PhD student

External links:
https://www.facebook.com/paleoUnivpm
https://www.instagram.com/paleolab_2/

Title and goals

Provide the title of the topic and a short summary of the project idea. max 200 words

DeoxygenaTion in a waRming climAte :iNsightS from the geologiCal rEcord to uNderstand moDErN Trend (**TRANSCENDENT**)

Supervisor: Prof. Alessandra Negri

In the geological past the Mediterranean Sea underwent cyclical deoxygenation events, responsible for the annihilation of the eukaryotic life in deep-sea environments. These deoxygenation events are recorded by organic-rich sediments called sapropel, which date back to 15 Ma. Some of these sapropels are deposited during warmer than today intervals, with temperatures in the range of the predicted at the end of this century in the MS, thus offering an ideal real-world data archive to explore deoxygenation dynamics and the ecosystem response to higher temperatures and oxygen-starved conditions.

Overall objective: Investigation of oxygen dynamics in the MS, by documenting deoxygenation and (re)ventilation processes during sapropels that deposited in a climate state warmer than today and analogous to the future business-as-usual scenarios.
In this respect TRANSCENDENT will develop the following research objectives aimed to:

1. **Focus on the geological record of warm Pliocene sapropel investigating the sediment composition and grainsize+ the fossil compound.**
2. **Modern foraminifera culture under different temperature and Ph to be compared to the past record.**
3. **Identification of physical and biological proxies to identify deoxygenation trend in fossil sequences.**

The project is expected to have tangible impacts in providing new insight on the effects of global change on the marine environment and ecosystems, with a specific focus on the mechanisms leading to deoxygenation events.

Contact details (*including email address of the supervisor*)

Alessandra Negri
Dept. of life and environmental sciences (DISVA), Polytechnic University of Marche, Via Brecce Bianche 60131 Ancona
email: a.negri@univpm.it