



# UNIVERSITÀ DI PAVIA

## Corso di Dottorato in Scienze della Terra e dell'Ambiente

### FORM PER PROGETTI BANDO DOTTORATO XXXVIII

#### 1. Project title

“Plasticagglutinated” reefs by the sedentary polychaete *Sabellaria spinulosa* (Leuckart, 1849) in the Adriatic Sea: microplastic uptake, accumulation and associated risk

#### 2. Proposer

Surname	Mancin
Name	Nicoletta

#### 3. Research Unit

Surname	Name	Institution
Ciacci	Caterina	Università di Urbino – Dipartimento di Scienze Biomolecolari
Frontalini	Fabrizio	Università di Urbino – Dipartimento di Scienze Pure e Applicate
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#### 4. Key words

(Max. 5 – at least 2)

*Sabellaria spinulosa*, arenaceous bioconstruction, microplastic pollution, coastal environment, Mediterranean Sea

#### 5. Abstract

(Max.1.500 characters with spaces)

The project focuses on the arenaceous bioconstructions by the honeycomb worm *Sabellaria spinulosa* and addresses on an emerging pollutant, the microplastics. *Sabellaria* bioconstructions are highly complex systems, where dismantling and growth forces are in a dynamic equilibrium due to presence of physical and biological factors. These fragile structures are currently threatened by several anthropogenic pressures, such as coastal urbanization, tourism, reduction of sandy sediment supply following dam construction and water pollution by urban waste, heavy metals and plastics. The progressive increase of microplastics in the sea is affecting various organisms, particularly the ones living in coastal areas, and probably, this environmental concern is still largely underestimated. Microplastics incorporated in seaworm tissues as well as in their arenaceous tubes have been scantily documented particularly in the Mediterranean Sea. Moreover, we do not know whether their incorporation was accidental or actively operated by the polychaete worm and whether this will induce negative effects in the future.

This project aims at filling the knowledge gaps, providing new data on the uptake and accumulation of microplastics in the Adriatic bioconstructions by *Sabellaria spinulosa* (Leuckart, 1849), also evaluating the possible associated risks. The project will involve a collaboration among the Universities of Pavia, Urbino and Bari and will be supervised by



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a team composed of a micropaleontologist expert in the analysis of agglutinated organisms, one sedimentologist expert in sabellariid bioconstructions and two researchers with biological and environmental background on microplastic pollution.