

RESEARCH THEME

XLII Cycle – a.y. 2026/2027

Title of the doctoral research	Biocultural Heritage: A Novel Epistemology for Biodesign
---------------------------------------	--

Proponent professor	Daniela Petrelli
----------------------------	------------------

Abstract

This research investigates how institutions caring for biological collections (natural history museums, botanical gardens, aquariums, ecc.) can inform regenerative design, similarly to how cultural institutions have historically shaped established design paradigms. It proposes to expand the notion of biocultural heritage to include not only biological specimens and associated knowledge, but also emerging practices of bio-based and biofabricated materials and biodesign.

Beyond being repositories of biological data, these institutions are understood as dynamic socio-technical infrastructures that collect, study, and care for living systems over time. This interdisciplinary research frames them as epistemic environments producing situated, relational, and responsible knowledge, essential for design approaches addressing ecological transition.

Through mappings, case studies, and collaborative experiments (focusing on specific ecosystems and biomaterials), the project explores how practices of collection, documentation, and conservation can be reactivated as mediating devices between biology, design, and society, involving visitors as citizen scientists. An experimental dimension focuses on the development of bio-based, biofabricated, and bioreceptive materials.

By integrating biodesign practices within these institutions, the research argues for an expanded understanding of biocultural heritage, capable of supporting life-centred, regenerative design models.

Keywords

Biocultural Heritage; Regenerative Design; Materials Design