

## CURRICULUM of Roberto Guidetti

### Academic Position and Education

1993: Degree in Biological Sciences, University of Modena

2000: PhD in Animal Biology, University of Modena Reggio Emilia

2001-2014: Researcher of Zoology, Department of Animal Biology, University of Modena and Reggio Emilia (UNIMORE)

2014 November-Present: Associate Professor of Zoology; Department of Life Sciences, UNIMORE

2012 and 2016: obtained the National Scientific Qualification (ASN) for full professor in Zoology (Prima Fascia 05/B1).

Visiting Researcher at foreign research institutions such as Universities, Museums and polar research centres: University of Lund (Sweden), September-December 2000; East Tennessee State University (U.S.A.) in March 2010 and May 1995-January 1996; Kristianstad University (Sweden) in March 2022, in June 2014 and June-July 2013; Natural History Museum of Denmark in May 2014, August 2008, October 2003 and May 2001; Antarctic research station Mario Zucchelli (Terranova Bay, Victoria Land) in December 2010-February 2011; National Museum of Natural Science of Madrid (CSIC) (Spain) in May 2002; Danish Arctic Station of Disko Island (Greenland) in August 2000.

Research Activities: The main research activities are related to different aspects of biology, ecology and evolution of micrometazoans and terrestrial arthropods. Phylogenetic and taxonomic aspects were integrated with morphological (LM, SEM, TEM, CLSM, X-EDS microanalysis) and molecular (nuclear and mitochondrial markers, DNA metabarcoding) analyses through total evidence approaches and bioinformatics analyses. Results allowed a systematic reorganization of several taxonomic groups, identification of evolutionary lines and erection of many new taxa. The application for the first time to tardigrade of DNA barcoding allowed cryptic species identification opening new fields of investigation in taxonomy and biogeography of these organisms. Important contributions were brought to evolutionary and morpho-functional knowledge of anatomy of tardigrades and insects integrating traditional and innovative approaches. He applied DNA metabarcoding technique to study tardigrades microbiomes and biodiversity of communities living in different environments. He studied also the adaptive meaning of dormancy, using laboratory experiments and observation in nature, integrating morphological, physiological and biochemical methods, providing important indications on the adaptive strategies evolved by tardigrades to tolerate different environmental stresses. He has developed research on alpha/beta biodiversity in relation to climate change. He identified effective molecular tools for monitoring alien insects, identifying the dynamics of invasion of pest species applying population genetic approach or possible predators for their biocontrol through the gut content analyses. He is part of a research group dealing with biology and ecology of soil organisms as a function of agronomic practices.

Bibliometric indicators: he authored more than 130 publications (111 in ISI international journals, 26 in non-ISI journals, 11 book chapters), and has an H index of 33 with a total of 3810 citations (source Scopus). For a complete list <http://personale.unimore.it/rubrica/pubblicazioni/rguidetti>. He has also presented more than 60 oral or poster communications to national and international conferences.

Project Granted as Principal Investigator (PI) or Responsible of the research Unit (RU)  
international and national research projects in competitive and non-competitive calls:

Projects funded in competitive grants

2023-2025 “Soil Meiofauna Advanced Taxonomy school” (Reference nr 10/T6) a Third Party Project Grant under the EU TETTRIs Project

2023-2024 “Impact of radiation on life cycles of two edible insect species useful for prolonged space travel” Fondo di Ateneo per la Ricerca 2023 Granted by Univ. of Modena and Reggio Emilia.

2021-2022 “Potential of insects as nutritional food in space flight” (PINS), Topical team project granted by European Space Agency (ESA) (RU)

2021-2022 “Hands-on lab teaching activities on biodiversity: tardigrades, the most resilient animals on Earth” granted by Public Engagement activities UNIMORE (PI)

2017-2019 “Climate warming: epigenetic responses in Antarctic tardigrades” granted by UNIMORE (5.4k EURO) (PI)

2017-2019 “Tardigrades in Norwegian forests” granted by Norwegian Biodiversity Information Centre (NBIC) (to UNIMORE 35K euro) (RU)

2014-2016 "Innovative tools and protocols for the monitoring and sustainable control of the alien bug *Halyomorpha halys*, a new threat to plant health, and other fruit crops Heteroptera harmful to the territory of Modena" granted by Banking Foundation of the Cassa di Risparmio of Modena (270K euro) (PI)

2014-2016 “Evolutionary history and phylogeography of Antarctic organisms and ecosystem responses to climatic and environmental changes” " granted by Programma Nazionale Ricerche in Antartide PNRA-MIUR (to UNIMORE 7K euro) (RU)

2011 “Evolutionary games with everyday materials - activities for primary and secondary school teachers and students”, granted by European Society for Evolutionary Biology (2K euro) (PI)

2009-2011 “Adaptive strategies to maintain biodiversity: cryptobiosis and thermotolerance in Antarctic tardigrades” granted by PNRA-MIUR (30K euro) (PI)

1999 “New approach for the study of population dynamics and systemic of tardigrades” granted by MURST for young researchers (2.6K euro) (PI)

1995 “Ecology and systematics of tardigrades of Tennessee (USA)” granted by CNR and UNIMORE (2.6K euro) (PI).

Projects funded in non competitive grants

2016 “Microbiomes in tardigrade species” granted by UNIMORE International Mobility (PI)

2015 “Upgrading the Tardigrada taxa in the World Register of Marine Species (WoRMS)” granted by WoRMS-LifeWatch (PI)

2014 “The eutardigrade family Eohypsibiidae: systematic revision, biogeographic distribution, and dormancy forms”, granted by EU Integrated Infrastructure Initiative SYNTHESYS (PI)

2013 “Biodiversity of the tardigrade fauna of two natural protected areas affected by the climate change effects” granted by "C.M. Lerici" Foundation-Italian Institute of Culture in Stockholm (Sweden) (PI)

2008 “Taxonomic study of Greenlander and Italian boreo-alpine tardigrade species” granted by EU SYNTHESYS (PI)

2003 “Encystment in tardigrades: differences and common traits in the species” granted by EU Improving Human Potential Program (COBICE) (PI)

2002 “Tardigrade biodiversity of Spain” EU project BIOD-IBERIA (PI)

2001 “Phylogenetic meaning of the pillar-like structures in the tardigrade cuticle” granted by EU COBICE (PI).

He also participates to several other projects mainly related to the study of adaptation to extreme environments using -omic and biochemical approaches or on biodiversity of mirometazoan.

Member of the Scientific/Organization Committee of International and National Meetings: 6 international and 1 national congress [i.e. 4 editions of the International Symposium on Tardigrada: 15th in 2022, Krakow (Poland); 14th in 2018, Copenhagen (Denmark); 13th in 2015, Modena (Italy); 10th in 2006 Catania (Italy); 74th Congress of Unione Zoologica Italiana, Modena (Italy) in 2013; New Trends in Science and Technology Education, Modena (Italy) in 2009; 12th International Meiofauna Conference Ravenna (Italy) in 2004] and in the organization of several workshops on DNA barcoding and on biodiversity.

Honors and awards: Best poster presentation: 2018, 79° Congresso Nazionale dell'Unione Zoologica Italiana (Lecce); 2017, 1st InExO symposium, Société Française de la Méditerranée Latine (Montpellier, France); 2015, 76 th Congresso Nazionale dell'Unione Zoologica Italiana (Viterbo, Italy). 2014, 75th Congresso Nazionale dell'Unione Zoologica Italiana (Bari, Italy); 2006, 1st Congress of the Italian Society of Evolutionary Biology (Florence, Italy); 2005, 66th Congresso Nazionale dell'Unione Zoologica Italiana (Rome, Italy); 2004, 65th Congresso Nazionale dell'Unione Zoologica Italiana (Giardini Naxos, Italy).

Invited speaker: 2015, Annual Meeting of the Society for Integrative and Comparative Biology (West Palm Beach, USA); 2015, 11th Simposium Internacional en Ciencias. Chetumal, Quntana Roo, (Mexico); 2008, Symposium on Future Trends of Taxonomy–EDIT European Distributed Institute of Taxonomy (Carvoeiro, Portugal).

Chairman for the session: 2018, “Omics, Physiology & Cryptobiosis” at 14th International Symposium on Tardigrada (Copenhagen, Denmark); 2012, “Taxonomy and Phylogeny” at 12th International Symposium on Tardigrada (Villa Nova de Gaia, Portugal); 2009, “Physiology and molecular biology” at 11th International Symposium on Tardigrada (Tübingen, Germany).

He was tutor of 4 post-doc research fellows, 5 PhD students of the PhD school “Models and Methods for Material and Environmental Sciences”, and more than 50 bachelor and master students.

Member of PhD School at UNIMORE: 2015-present: Models and methods for material and environmental sciences (M3ES); 2009-2013: Earth system sciences: environment, resources and cultural heritage; 2002-2011: Evolutionary and Environmental Biology

Teaching Experience: he has an intensive teaching activity offering different lectures during his career, which topics dealt with systematic zoology, evolutionary biology and didactic of biology (e.g. Animal Zoology, Animal Systematics, Biogeography, Evolutionary Biology, Applied Zoology) in several bachelor and master degrees (e.g. Biological Sciences, Natural Sciences, Agronomy)

Outreach Activities: From 1995 to present, he has carried out with continuity numerous activities of scientific divulgation aimed to the public and to schools of all levels, i.e. several exhibitions on biodiversity and biological evolution. In particular, an exhibition dedicated to C. Darwin for the 150th birth anniversary ("Darwin: Modena and 200 years of evolution") reaching more than 20,000 visitors. He wrote articles and presented lectures in different cultural contexts and on various topics related to zoology. During the years 2006-2010 was curator of the Museum of Zoology and Comparative Anatomy of UNIMORE, and actually is member of the board of the System of Museums and Botanical Garden of UNIMORE.

Last updated 17/06/2024