Benjamin MISSON

Associate professor
Toulon University (UTLN)
Mediterranean Institute of Oceanography (MIO)

Education

2006: BSc in Environmental biology, Blaise Pascal University

2008: MSc in ecosystem biology and functioning, Blaise Pascal University, Laboratory Microorganisms: Genome and Environment (UMR CNRS 6023)

2011: PhD in aquatic microbial ecology, Blaise Pascal University, Laboratory Microorganisms: Genome and Environment (UMR CNRS 6023): *"Genetic structure and toxic potential in populations of the harmful cyanobacterium Microcystis all along its annual development cycle"* (Supervisors: Dr D. Latour and Dr C. Amblard)

2019: Accreditation to supervise research (HDR) on the subject "*Ecology of microbial populations and communities in water and sediment under high human pressure"*

Current research activities

Research themes

- Dynamics, structure and diversity of benthic and planktonic marine microbial communities
- Microbial responses to natural and human-induced variabilities in the marine coastal environment
- Microbial contribution to the fate dissolved organic matter in the coastal Mediterranean sea

***Keywords*:** microbial ecology, microbial diversity, biogeochemistry, molecular ecology, flow cytometry

Biological models of interest: heterotrophic prokaryotes, phytoplankton

Main ecosystems studied: urbanized bays, ports, estuaries

Research programs (since 2014):

- C-OMICS (2020-2021, Coupling meta-OMICS approaches for in depth studies of micorbial responses to human induced perturbations in the coastal environment, **PI**, *UTLN/TPM, 30,7 k€*)
- GEREMIA (2018-2021, GEstione dei REflui per il MIglioramento delle Acque portuali, partner, *INTERREG Marittimo*)
- SE.D.RI.PORT. (2017-2020, SEdimenti, Dragaggi, RIschi PORTuali, *INTERREG Marittimo,* ***manager of WP*** *'Risk assessment for the coastal environment' and* ***scientific coordinator for Toulon University*** *since 2018, 220 k€*)
- FOS SEA (2017-2020, Environmental risk assessment of biological fouling control along the Mediterranean coast, partner, *ANR*)
- EPIBIOINDIC (2017-2018, Epibionts of marine grass, indicators of coastal ecosystems quality? partner, *FR ECCOREV*)
- Development of a Quantitative Lab and Field-Based Microbial Tool to Determine Arsenic (2016, partner, *MITACS/Campus France*)
- IMPRECI-M² (2016-2017, Reciproqual impacts between microorganisms and trace metals in the coastal environment: who controls who? **PI**, *EC2CO ECODYN+MICROBIEN, 37.8k€*)
- METOPHYTO (2015-2016, Influences of multiple metallic pollutions representative from Toulon Bay on picophytoplankton, **PI**, *FR ECCOREV, 7k€*)
- PREVENT (2015-2017, Protection of Mediterranean coast: evaluation, monitoring, consequences, socio-economical impacts– Application to Toulon Bay, partner, *UTLN/TPM/CD83/Région PACA*)
- COMMET (2014, Characterization of microbial communities involved in mercury biogeochemistry in the sediment of Toulon Bay, **PI**, *UTLN/TPM: 15.5k€*)

Active national and international collaborations: Instituto di Biofisica, CNR ,Pisa, Italie; University of Ottawa and Trent University, Canada; Ruder Boskovic Institute, Zagreb, Croatia; Mediterranean Institue of Biodiversity and Ecology, Marseille, France; Laboratory of Materials, Polymers, Interfaces in the Marine Environment, Toulon, France.

Supervision: 3 postdocs, 3 PhD students, 2 ingeneers, 14 master students or equivalent, 7 undergraduate students

Scientific production: 35 scientific articles, 4 invited conferences, > 70 communications in international and national congresses.

5 recently published papers:

- Coclet C., ... and **Misson B.** (2018). *Progress in oceanography*, doi: 10.1016/j.pocean.2017.06.006
- Coclet C., ... and **Misson B.** (2019). *Frontiers in Microbiology*, doi: 10.3389/fmicb.2019.00257
- Coclet C., ... and **Misson B.** (2020). *FEMS Microbiology Ecology*, doi: 10.1093/femsec/fiaa048
- Layglon N., **Misson B.** *et al.* (2020). *Marine Pollution Bulletin,* doi: 10.1016/j.marpolbul.2020.111196
- **Misson B.** et al. (2021), *Peer J,* doi: 10.7717/peerj.11075

Teaching activities

Lessons and practical work for undergraduate and master students in plant biology and physiology, biodiversity, molecular biology, microbial ecology, microbial ecotoxicology.

Other responsibilities

Co-leader of transverse axis "Contaminants in the marine environment" in the MIO and co-leader of theme "reciproqual influences between microbes and contaminants" in the Environmental Microbiology and Biotechnology team. Correspondant of UTLN for the French Marine Universities network.