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The 2023 CIVIS Blended Intensive Programme

**Climate,
Environment and
Energy HUB**
Prof. M.L Costantini
Coordinator



*For Biology, Ecology,
Environmental Science,
Biotechnology and
Chemistry students*

**Master and
Doctoral students**

**Innovative approaches for
effective detection and
removal of pollutants in
sustainable water
management**

12-16 June 2023 in Rome

*Department of
Environmental Biology*

JOINT THE EVENT !

SAVE THE DATE !



In line with Sustainable Development Goals



University
of Glasgow



General programme of the BIP

	Monday	Tuesday	Wednesday	Thursday	Friday
9: 00 – 11: 00	Arrival and registration – Opening session	Learning sessions	Learning sessions	Field training	Project writing session
11: 15 – 13: 15	Learning sessions	Learning sessions	Learning sessions	Field training	Project writing session
14: 15 – 16: 15	Learning sessions	Workshop	Visit to Stakeholders	Field training	Sum up and feedback
16: 30 – 18: 30	Learning sessions	Workshop	Visit to Stakeholders	Field training	Closing session
20: 30				Social event	



LECTURES AND APPLICATIONS IN ROME

1) New ecological approaches to assess water quality

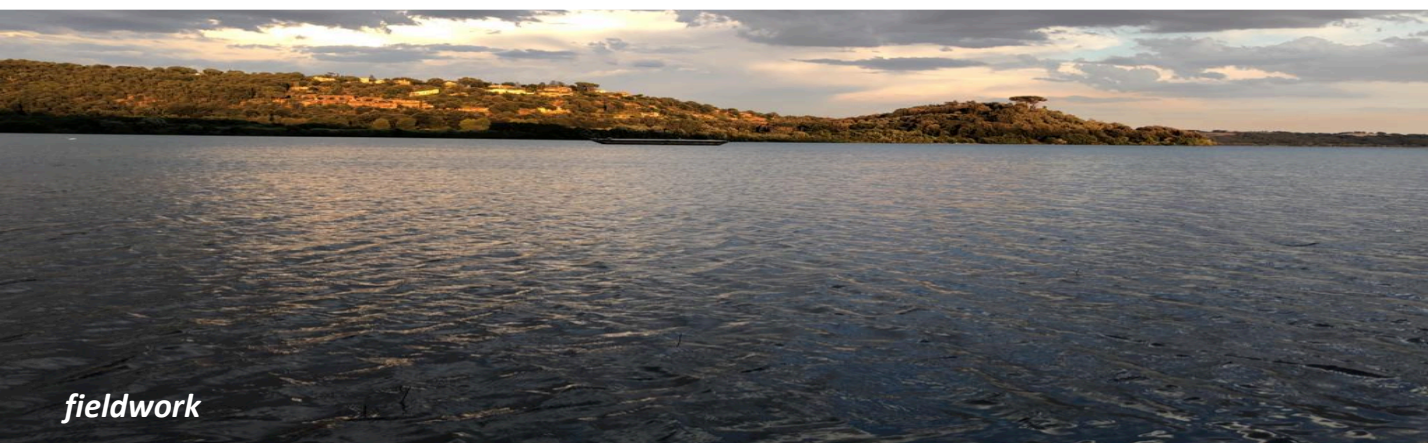
- Isotope fingerprints to track pollution sources and environmental changes over space and time
- Detection of Microcystin-producing cyanobacteria and naturally-occurring biodegrading bacterial community using qPCR.
- Ecotoxicology testing adapted for detection of Microcystins
- Identification of antibiotic resistant bacteria and genes
- Ecotoxicology testing with macro-invertebrates
- Behavioural studies with organisms
- Non-animal alternatives (NAMS etc)
- Identification of microbiological indicators of depollution by molecular methods
- Ecotoxicological tests in water mixtures to support chemical analysis
- Degradation tests under anaerobic conditions

2) New chemical approaches to assess water quality

- Sources, occurrence and health impacts of emerging contaminants and methods for their identification
- Sensors to monitor water quality
- Digital PCR for monitoring using molecular markers
- Non-target screening and targeted analysis

3) Green and nature-based solutions for pollution remediation including bioenergy production

- Green chemistry solutions for water pollution problems
- Bioelectrochemical applications for energy production and waste treatment
- Bioelectrochemical characterization of microorganisms for biocathode and bioanode applications
- Nature-based solutions for pollution remediation
- Bioremediation of emerging contaminants, phyto-assisted bioremediation
- Energetic valorisation of human activities' residual products including pharmaceuticals and other emerging contaminants
- Bioelectrochemical systems (BES), microbial fuel cells (MFCs), microbial electrolysis cells and anaerobic digestion in bioremediation, wastewater treatment, biofuel and biochemical production





Affiliation of the Academics



Prof. Maria Letizia Costantini
Prof. Edoardo Calizza
Dep. of Environmental Biology

Dr. Anna Barra Caracciolo
Water Research Institute, National Research Council

Dr. Giulia Massini
Dr. Antonella Marone
*Italian National Agency for New Technologies, Energy
and Sustainable Economic Development*



Prof. Michelle Bloor
*University of Glasgow
School of Interdisciplinary
Studies*



Prof. Ann-Kristin E Wiklund
Prof. Rehab El-Shehawy

*University of Stockholm
Dep. of Environmental Science*



Prof. Carmen Chifiriuc
Prof. Delia-Laura Popescu
Prof. Serban Stamatin

*University of Bucharest
Faculty of Biology*



Prof. Godfrey Bwire

*University of Makerere
School of Public Health,
Uganda*



*Innovative approaches for
effective detection and
removal of pollutants in
sustainable water
management*

**Blended Intensive
Programme**

**Rome
12-16 June 2023**



H₂O Pollution: holistic approach & nature based solutions

Organizing Committee

Coordinator: Maria Letizia Costantini
Department of Environmental Biology

Anna Barra Caracciolo
*Head of Research Water and Soil Ecology Lab
Water Research Institute - National Research Council*

Giulia Massini
*Senior Researcher
Italian National Agency for New Technologies, Energy and Sustainable
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