



University of Genova

**Department of Earth, Environmental
and Life Sciences**

**Doctorate Course in Earth and
Environmental Science and
Technology**

Università degli Studi di Genova



Dottorato in Scienze e Tecnologie
per l'Ambiente e il Territorio

Curriculum in biology applied to agriculture and the environment

Research Theme n. 4

<p>Titolo Presenza di indicatori di antibiotico resistenza in ambiente Title Presence of Antibiotic resistance indicators in the environment</p>
<p>Tutors Elena Grasselli elena.grasselli@unige.it Luigi Vezzulli luigi.vezzulli@unige.it co-tutor: Elena Nicosia elena.nicosia@regione.liguria.it elena.nicosia@arpal.liguria.it</p>
<p>Program description including the formation program abroad (Inglese) Wastewater are reservoirs and environmental suppliers of antibiotic resistance. They have also been proposed to be hotspots for horizontal gene transfer, enabling the spread of antibiotic resistance genes between different bacterial species. Wastewater contains antibiotics, disinfectants, and metals which can form a selection pressure for antibiotic resistance, even in low concentrations. The presence of resistance and virulence genes will be related to the presence of contaminants in water such as estrogen-mimicking endocrine disruptors. A period is available on environmental microbiology laboratory in Switzerland.</p>
<p>Financial support: Regione Liguria and ARPAL</p>
<p>Tutor's publications (max 3)</p> <ol style="list-style-type: none"> 1. Wastewater surveillance of SARS-CoV-2 variants in October-November 2022 in Italy: detection of XBB.1, BA.2.75 and rapid spread of the BQ.1 lineage. La Rosa G, Brandtner D, Bonanno Ferraro G, Veneri C, Mancini P, Iaconelli M, Lucentini L, Del Giudice C, Orlandi L; SARI network; Suffredini E. <i>Sci Total Environ.</i> 2023 May 15;873:162339. doi: 10.1016/j.scitotenv.2023.162339. 2. The rapid spread of SARS-COV-2 Omicron variant in Italy reflected early through wastewater surveillance. La Rosa G, Iaconelli M, Veneri C, Mancini P, Bonanno Ferraro G, Brandtner D, Lucentini L, Bonadonna L, Rossi M, Grigioni M; SARI network; Suffredini E. <i>Sci Total Environ.</i> 2022 Sep 1;837:155767. doi: 10.1016/j.scitotenv.2022.155767. 3. Development of an integrated environmental monitoring protocol for SARS-CoV-2 contamination. Applications at the IRCSS San Martino Polyclinic Hospital in Genoa, Italy. Izzotti A, Grasselli E, Barbaresi M, Bixio M, Colombo M, Pfeffer U, Pulliero A, Sossai D, Borneto A, Boccaccio A, Manfredi V, Bassetti M, Nicosia E, Tiso M. <i>Environ Res.</i> 2022 Jun;209:112790. doi: 10.1016/j.envres.2022.112790.