

LERU STudent REseArch Mobility Programme (STREAM)
Project proposal



Host University:
Università degli studi di Milano



Field:
Medicine/biology

Specified field, subject:
Molecular biotechnology, pharmacology, biophysics

Research project title:
Quantitative microscopy of bacteria dynamics and capturing



Possible starting month(s):

Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
				x		x					



Possible duration in months:

1	2	3	4	5	6
		x	x	x	



Suitable for students in: 1st and 2nd cycle (Bachelor and Master students)

Prerequisites: For students of Physics or Engineering: basic knowledge of biophysics. For students of Biology or Biotechnology: basic knowledge of microbiology and physics (preferentially optics).

Restrictions: none



Description:

The proposed activity focuses on the study of the dynamics of bacteria and their binding to engineered molecular probes (derived from antibodies, lectins, aptamers). The students will be trained in optical biosensors technology, quantitative microscopy approaches, image processing and DNA nanotechnology. The project is proposed in the framework of three funded collaborative projects: the EU FP7 project NAPES (www.napes.eu), scheduled to finish at the end of May 2017 (PI: Marco Buscaglia); the currently active FIRB project ANISOFT (PI: Roberto Cerbino); and the PRIN project 2010-2011 titled "Building with DNA: an experimental, numerical and theoretical study" (PI: Tommaso Bellini).

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