

Tutor (listed as submitting date)	Title	Topics and Methods	CFU	positions/ academic year
Prof. Stefania Pucciarelli	<i>Structural and functional characterization of enzymes overexpressed and purified from E. coli and in animal tissues.</i>	Instrumental approach: - UV-VIS spectroscopy - HPLC separation of substrates and products of enzymatic reactions - limited proteolysis analysis through SDS-PAGE and Western Blotting.	3	6
Prof. Amantini	<i>In vitro determination of toxic effects of anti-cancer compounds.</i> <i>Evaluation of apoptotic and necrotic cell death.</i> <i>Detection of specific protein in cell lysates.</i>	Models used: bladder cancer, prostate cancer and glioma cell lines. Technical approaches: immunofluorescence and FACS analysis, Annexin staining, cell cycle by PI staining, ROS evaluation by DCFDA staining, DNA ladder, western blot, MTT test.	3	
Prof. Favia	<i>Engineering bacteria and yeasts to colonize adult mosquitoes</i>	Analysis by Fluorescence Microscope to validate the efficiency of colonization; Dissection of mosquito organs to molecularly determine the presence of specific symbionts Real time-PCR analysis to determine the amount of different micro-organisms in mosquito To make ready bacterial/yeast libraries from different mosquito species/organs.	3	
Prof. Eleuteri	<i>Effects of probiotics administration in a transgenic mouse model of Alzheimer's disease.</i>	A mixture of probiotics will be administered to AD mice and the effects on inflammation, proteolysis and oxidative status will be evaluated.	3	3
Prof. Eleuteri	<i>P62 engineered lactobacilli as biotherapeutic agents for AD</i>	The effects of p62 engineered lactobacilli on the onset and progression of AD will be evaluated on a transgenic mouse model.	3	2

Dr. Valentina Cecarini	<i>Wickerhamomyces anomalus</i> toxin characterization	Purification and structural characterization of the protein	3	3
Prof. Angeletti	Enzyme modulation	In-silico modeling, on-surface/in-solution modulation of enzyme activity	3	4
Prof.A. Giuliodori	Development of Apicoplast-targeting drugs to treat relevant infectious diseases	Gene cloning; protein expression and purification in E. coli; in vitro synthesis of mRNAs; preparation of cellular extracts; functional assays.	3	2
Prof.ssa S. Silvi	Bacterial characterization of gut microbiota in human and animal	Faecal samples processing Dna extraction from faecal matrix Real-time PCR for enumeration of selected group of bacteria	3	2
Prof.ssa S. Silvi	Isolation and characterization of probiotic strains from faecal samples of humans and animals	Isolation of bacterial strains in anaerobic cabinet Phenotypic and genotypic characterization of bacterial strains Gastrointestinal stress tolerance tests Anti-pathogenic activities Antibiotic susceptibility profiles Bacteriocin activity Intervention human study	3	2
Prof. C. Miceli Prof. Sandra Pucciarelli	gene sequencing and gene prediction & cDNA cloning.	1. analysis of bacterial colonies from a genomic library with purification of plasmids 2. plasmid sequencing and sequence analysis of all the possible reading frames 3. intron prediction 4. blast analysis to identify possible encoded proteins 5. choice of one or two frames and design of primers for cDNA analysis 6. PCR amplification of cDNA and cloning of amplified products 7. plasmid purification and sequencing to confirm introns and the predicted protein encoded by the gene of interest	3	2
Prof. Francesco Palermo	Environmental endocrinology: development of	Use of a quantitative immunoenzymatic assay (ELISA) to measure plasma vitellogenin (VTG) in fish exposed to	3	2

(URDIS - San Benedetto del Tronto)	proteomic and genomic biomarkers to assess the effects induced by environmental xenoestrogens exposure.	xenoestrogens. Development of a PCR-ELISA method for the analysis of estrogen receptor subtypes expression in fish tissues. (the experience will be held at the San Benedetto del Tronto laboratory)		
Prof. Dezemona Petrelli	Characterization of <i>Streptococcus pyogenes</i> clinical isolates from patients suffering from pharyngitis	Screening of genetic determinants of virulence and antibiotic resistance, molecular typing, and antimicrobial susceptibility testing	3	2
Prof. Conti	Management of the Herbarium Apenninicum	Collecting vascular plants in the field, identification, preparing specimens, cataloging herbarium specimens (the experience will be held at the Centro Ricerche Floristiche dell'Appennino in Barisciano, AQ)	3	2
Prof. Conti	Morphological analysis of vascular plants	Investigate the variability of "critical groups" of vascular plants to clarify the systematics (the experience will be held at the Centro Ricerche Floristiche dell'Appennino in Barisciano, AQ)	3	2