PhD in Biology **39th Cycle** **2023-2026**
List of approved projects ***(this list could be updated)***

UPDATE AUGUST 1ST

Project Title	Short Description (100 parole / 600 caratteri spazi inclusi)	Fellowship	Main Department	Periods Abroad / Periods in external location or company	Foreign Lab / External location in Italy or abroad	PROPONENT	Tel	E-mail	Comments
Selection of bioindicators of soil quality	Recently, to preserve the level of naturalness of terrestrial ecosystems or to draft management plans aiming to restore or rehabilitate environments that are degraded or severely damaged are of great concern. In this framework, the research aims to assess the role of soil as carbon sink and as system hosting biodiversity. To achieve the aim, the research will be performed in forest and man-made ecosystems. The structural and functional biodiversity of microorganisms (bacteria and fungi) and microarthropods will be studied. The results will increase the current knowledge about edaphic biodiversity and will provide the identification of bioindicators of soil quality.	**Borse finanziate dall'Ateneo. Full Fellowship by University of Naples "Federico II"**	**Dipartimento di Biologia**	**> 3 months abroad**	Foreign Lab: Centre d'Ecologie Fonctionnelle et Evolutive, Université Paul-Valéry, Montpellier III (Prof. Jérôme Cortet)	**MAISTO GIULIA**	081-679095	giulia.maisto@unina.it	
The impact of Nutrition on Brain Metabolism and Disease	In recent decades, the link between nutrition, brain health and risk of central nervous system pathologies was highlighted. Brain status strongly depends on energy availability and diet can deeply impact brain functions like synaptic plasticity, cognitive processes, neuroendocrine functions and behaviour, thus affecting health. Diet manipulation, i.e. both dietary supplement (such as sugars, fatty acids) has considerable effects on brain physiology and could be of particular importance in the context of global human aging, which is associated with the increase of neurodegenerative diseases. How different diets/nutritional strategies (from single micro/macronutrient to complex foods and/or functional food particularly probiotics, and postbiotics) modulate brain function, with special regard to its metabolism, redox homeostasis, insulin signaling, neuroinflammation, gut/brain axis, and synaptic function is the focus of this PhD research project proposal	**Borse finanziate dall'Ateneo. Full Fellowship by University of Naples "Federico II"**	**Dipartimento di Biologia**	**> 3 months abroad**	Foreign Lab: Dr Fiorenzano - Lab Developmental and Regenerative Neurobiology, Wallenberg Neuroscience Center, and Lund Stem Cell Center, Department of Experimental Medical Science, Lund University (Sweden)	**CIGLIANO LUISA**	081-2535215 081-2535244	luisa.cigliano@unina.it	
Characterization of post-translational modifications of the different isoforms of glucose-6P dehydrogenase from plant and algal sources	The project aims to clarify the regulation of plant glucose 6-phosphate dehydrogenase in the response to abiotic stress and in the diversion of metabolim to the synthesis of secondary metabolites. A main point is to define the posttranslational modifications present on the different G6PDHs, with a particular regard to glutathionylation and O-GlcNAcetylation. Using the facilities present at Sorbonne University in Paris, the 3D structure of the plant enzyme will be possibly determined, in order to describe the assembly and regulation of the activity, that has been elusive to plant biologists until today	**Borse finanziate dall'Ateneo. Full Fellowship by University of Naples "Federico II"**	**Dipartimento di Biologia**	**> 3 months abroad**	Foreign Lab: Prof. Stephane Lemaire - Laboratoire de Biologie Moléculaire et Cellulaire des Eucaryotes - Institut de Biologie Physico-Chimique, Université Pierre et Marie Curie - Université de Sorbonne – Paris (France)	**ESPOSITO SERGIO**	081-679124	sergio.esposito@unina.it	
Emerging pollutants and metabolic adaptations to hypoxia in Danio Rerio	Some antihypertensive drugs are considered emerging water pollutants. These in teleost could alter physiological pathways involved in the response to hypoxic stress due to natural or anthropogenic causes. Among the anthropic factors of hypoxia, there is the spillage of nitrites and nitrates into the waters, coming from civil and or industrial waste, which reduces the transport of O2 in the fish, causing the formation of methaemoglobin. The project aims to study the influence of antihypertensive drugs on the metabolic response and redox metabolism to nitrites and nitrates-induced hypoxia using Danio rerio as an experimental model.	**Borse finanziate PNRR ex D.M. 118 - Area Ricerca PNRR**	**Dipartimento di Biologia**	**> 6 months abroad**	Foreign Lab: Faculdade de Ciências da Universidade de Lisboa, Lisboa, Campo Grande, 1749-016, Portugal	**VENDITTI PAOLA**	081-2535080 081-2535082	paola.venditti@unina.it	
Environmental pollution and human fertility: genomics, proteomics, and metabolomics studies	This multidisciplinary project will focus on assessing alterations in the semen of subjects living in areas of high environmental impact and on understanding the molecular mechanisms of the reproductive toxicity of environmental pollutants using proteomics, genomics and metabolomics approaches. This is because there has been a drastic decline in the quality of human semen in industrialised countries over the last 40 years. Finally, the model organism Mytilus galloprovincialis will be used to assess the effects of certain environmental pollutants on spermatozoa under controlled conditions.	**Borse finanziate PNRR ex D.M. 118 - Area Ricerca PNRR / Fellowship by PNRR ex D.M. 118 Research Area PNRR**	**Dipartimento di Biologia**	**> 6 months abroad**	Foreign Lab: Dr. Marc Yeste Oliveras - Research group Biotecnologia de la Reproducció Animal i Humana - Department di BIOLOGIA - Universitat de Girona - Spain	**PISCOPO MARINA**	081-679081	marina.piscopo@unina.it	
Antibiofilm strategies: re-purposed non-antifungal approved drugs for the synergistic targeting of fungal pathogens	Antifungal drug resistance has emerged as a major challenge and fungal biofilms are important virulence factors correlated with invasive fungal infections. A possible approach to overcome the problem is the "repurposing strategy". The research project presents strong public health implications and has two aims: the isolation of Candida albicans and non from human districts which are associated with biofilm formation, and in vitro and in vivo evaluation of the effects of promising new anti-biofilm molecules alone or in combination with conventional drugs. The effectiveness of the examined molecules will be evaluated with respect to the host-pathogen interactions (infection, adherence, and invasion assays) by using mammalian cell lines as models.	**Borse finanziate PNRR ex D.M. 118 - Area Ricerca PNRR / Fellowship by PNRR ex D.M. 118 Research Area PNRR**	**Dipartimento di Biologia**	**> 6 months abroad**	Foreign Lab: Dr. Eddie Cytryn, Soil, Water and Environmental Sciences, Soil Chemistry, Plant Nutrition and Microbiology, Institute of Soil, Water and Environmental Sciences Volcani Institute Agricultural Research Organization, Bet Dagan, Israel	**GALDIERO EMILIA**	081-679181 081-679182	egaldier@unina.it	
Alzheimer's and Frontotemporal Disease: identification and characterization of genetic factors	Alzheimer's disease (AD) and frontotemporal dementia (FTD) are the two most common forms of neurodegenerative diseases. To date, only a few causative genes of AD and FTD have been described. The proposed project has a dual objective: 1.identify new genetic determinants for AD and FTD, through the acquisition of Whole Genome Sequencing (WGS) genomic data from clinically well-characterized and selected patient cohorts. 2.Use genome editing approaches for the generation of functional cellular models to study the relationship between genes related to neurodegenerative diseases.	**Borse finanziate PNRR ex D.M. 118 - Area Ricerca PNRR / Fellowship by PNRR ex D.M. 118 Research Area PNRR**	**Dipartimento di Biologia**	**> 6 months abroad**	Foreign Lab: Prof. Ana María Sánchez-Pérez, presso il Neurobiotechnology Lab, INAM (Institute of Advanced Materials), University of Jaume I, Castellon, Spain	**DONIZETTI ALDO**	++39-081-679082	aldo.donizetti@unina.it	
Modulation of the intestinal microbiota by probiotic spores displaying microbiota-targeting molecules	Alterations of the gut microbiota induce a variety of metabolic and inflammatory disorders and a number of microbiota-targeting approaches have been proposed to modulate its composition. Here we propose a new microbiota-targeting approach based on the delivery of selected molecules by spores of probiotic strains of Bacillus, known to modulate the microbial composition of the gut. The probiotic spores and the molecules adsorbed on their surface are expected to have synergistic effects on the gut microbiota, contributing to prevent the onset of metabolic and inflammatory damages.	**Borse finanziate PNRR ex D.M. 118 - Area Transizione Ambientale e Digitale / Fellowship by PNRR ex D.M. 118 - Digital and Environmental Transition Area PNRR**	**Dipartimento di Biologia**	**> 6 months abroad PLUS >6 months in external location or company**	Foreign Lab: Prof. Simon M. Cutting School of Biological Sciences Royal Holloway University of London Surrey, UK External Lab/Company in Italy (or abroad) : SporeGen Limited The London BioScience Innovation Centre London, UK	**RICCA EZIO**	081-679036	ericca@unina.it	L'attività è coerente con le Linee guida per le "Iniziative di sistema della Missione 4: Istruzione e Ricerca - Componente 2: dalla ricerca all'impresa", che si rifanno a tecnologie abilitanti, coerenti con le misure previste dal PNR 2021-2027. In particolare, la proposta riguarda aree disciplinari e tematiche coerenti con la transizione ecologica e ambientale del PNR negli ambiti PRODOTTI ALIMENTARI, BIOECONOMIA, RISORSE NATURALI, AGRICOLTURA, AMBIENTE, area Scienza e tecnologia alimentari (articolazioni 3 e 4).

New advances in Invertebrate-borne diseases Research	Le malattie trasmesse dagli invertebrati negli animali e nell'uomo sono di crescente interesse per la comunità scientifica a causa della loro diffusione in nuove aree e del loro elevato potenziale zoonotico. La loro distribuzione globale è causata da diversi drivers che contribuiscono alla diffusione dei vettori e dei patogeni, e alla loro introduzione nelle regioni non endemiche. Inoltre, l'interazione di animali selvatici e domestici che condividono ambienti, vettori e malattie con gli esseri umani è cruciale nell'epidemiologia di queste malattie che spesso impattano sulla biodiversità, come dimostrano i sempre crescenti episodi di mortalità di massa di specie chiave da un punto di vista ecologico. I molluschi e gli insetti possono trasmettere una vasta gamma di agenti patogeni dell'uomo e degli animali, i quali possono incidere negativamente non solo in termini sanitari, ma anche in termini produttivi ed ecologici. Questo studio si prefigge di implementare nuove strategie di sorveglianza e mitigazione utili per la prevenzione di nuovi focolai epidemici e la conservazione della salute e del benessere umano-animale anche a tutela della biodiversità.	**Borse finanziate PNRR ex D.M. 118 - Area Pubblica Amministrazione / Fellowship by PNRR ex D.M. 118 - Public Administration Area PNRR**	**Dipartimento di Biologia**	**> 6 months abroad PLUS >6 months in external location or company**	Foreign Lab: University of Veterinary Medicine - Dept- of Pathobiology - Vienna External Lab/Company in Italy (or abroad) : Istituto Zooprofilattico Sperimentale del Mezzogiorno (Napoli)	**DE VICO GIONATA**	081-2535149 081-2535134	gionata.devico@unina.it	
Generation of preeclampsia in vitro model system to identify a personalised therapeutic approach	Preeclampsia contributes significantly to pregnancy-associated morbidity and mortality. The project proposes identifying novel biomarkers to distinguish, characterize and monitor the different inflammatory stages of preeclampsia and simultaneously use them as therapeutic targets for naturally occurring compounds.	**Borse finanziate PNRR ex D.M. 118 - Area Transizione Ambientale e Digitale / Fellowship by PNRR ex D.M. 118 - Digital and Environmental Transition Area PNRR**	**Dipartimento di Biologia**	**> 6 months abroad PLUS >6 months in external location or company**	Foreign Lab: Dina Simes Universidade do Algarve, Faculdade de Ciencias e tecnologias External Lab/Company in Italy (or abroad) : Arterra Biosceinces - Napoli	**ANGRISANO TIZIANA**	081-679721	tangrisa@unina.it	
Immunosenescence signatures in inflammatory diseases	Immunosenescence is an age-related immunological failure with recurrent infection and increased mortality/morbidity in the presence of persistent low-grade inflammation. Like other types of senescence, immunosenescence is characterized by impaired proliferation and DNA damage, which triggers the inflammatory senescence-associated secretory phenotype (SASP) and immunological dysfunction. Immunosenescence varies among individuals depending on age, comorbidities, and somatic mutation burden. This study aims to identify the molecular mechanisms underlying immunosenescence and find tools to reverse the phenotypes by correcting the DNA damage response in immune cells and ultimately reversing SASP-induced inflammation.	**Borse finanziate PNRR ex D.M. 118 - Area Pubblica Amministrazione / Fellowship by PNRR ex D.M. 118 - Public Administration Area PNRR**	**Dipartimento di Biologia**	**> 6 months abroad PLUS >6 months in external location or company**	Foreign Lab: Prof. Max E. Gottesman, Columbia University Herbert Irving Comprehensive Cancer Center New York, NY 10032 United States External Lab/Company in Italy (or abroad) : IGA Technology Services Srl - Udine	**PORCELLINI ANTONIO**	081-679117	antonio.porcellini@unina.it	Per rientrare nella Linea M4C1, 4.1 (PA) Una formazione addizionale in "abilità complementari" come la scrittura di articoli, richieste di finanziamento, management scientifico e gestione della proprietà intellettuale sarà fornita da ricercatori operanti in vari ambiti anche favorendo la transizione digitale delle pubbliche amministrazioni (enti pubblici, centri e enti di ricerca).
Climate, environment, resources: new tools to contribute to the transition towards a resilient society	Climate change can represent a precise perspective for socio-economic recovery through adaptation strategies based on the use of biodiversity and ecosystem services. This project aims to innovate and harmonize methods and tools for the collection and management of biodiversity monitoring data; study the dynamics and trends to reverse its loss and promote its protection with in vivo and in vitro investigations; explore the best ways to manage the valorisation of waste in line with the new EU Circular Economy Action Plan.	**Borse finanziate PNRR ex D.M. 118 - Area Ricerca PNRR / Fellowship by PNRR ex D.M. 118 Research Area PNRR**	**Dipartimento di Biologia**	**> 6 months abroad**	Foreign Lab: Prof. MILAGROSA OLIVA RAMIREZ Department of Biology Universidad de Cádiz, Cadiz SPAIN Foreign Lab: Prof. LAUREANA REBORDINOS Department: Biomedicina, Biotecnología y Salud PúblicaResearch Instituto de Investigación Marina (INMAR) Universidad de Cádiz, Cadiz SPAIN	**SCUDIERO ROSARIA; GUERRIERO GIULIA**	081-2535217; 081-2535151	rosaria.scudiero@unina.it giulia.guerriero@unina.it	
Non-invasive diagnostic methods applied to microbiological degradation of different heritage materials	The aim of the project is to carry out a laboratory study on the bioreceptivity of different artwork objects, starting from the Collections hold in the Reggia of Caserta Park. The Museum of Reggia presents XVII-XIX Century paintings and sculptures, as well as a collection of contemporary art, the famous Terrae Motus exhibits. In the same time, the Archives of Reggia houses a large collection of Luigi Vanvitelli manuscripts and projects, that also need specific conservation approaches. the project aims to sample a range of works of artistic or historical interest using non-invasive methods by analyzing the composition of resident microbial populations. In a second phase, the most representative components of these populations will be isolated, with the aim of creating artificial microbiomes on which to perform bioreceptivity studies on different substrates, ranging from paper to photographic matrices, and stone materials	**Borse finanziate PNRR / PNRR Fellowship - MUR PE00000020 CHANGES - Cultural Heritage Active Innovation for Next-Gen Sustainable Society - Spoke / tematica: Science and technologies for diagnostics of cultural heritage – CUP E53C22001650006.**	**Dipartimento di Biologia**	**> 6 months abroad**		**POLLIO ANTONINO**		antoninino.pollio@unina.it	
Analysis of the impact of legumes and legume-derived postbiotics on human health by an in vitro and in vivo approach	Dietary guidelines from several organizations recommend increasing legume consumption and reducing red meat and derived products. Epidemiological studies indicate a possible association between higher legume consumption and decreased risk of cancer and cardiovascular disease. The focus of this PhD research project is the analysis of the metabolic and physiological effects of pulses consumption on health in a target human population with special regard to inflammation signaling and redox homeostasis, Also, the anti-inflammatory impact of postbiotic fermented products from legumes or process waste on intestinal cells will be evaluated.	**Borse finanziate PNRR / PNRR Fellowship - MUR PE00000003 ON Foods - Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods - Spoke / tematica: Food quality and nutrition – CUP E63C22002030007**	**Dipartimento di Biologia**	**> 6 months abroad**	**Dr Fiorenzano Lab Developmental and Regenerative Neurobiology, Wallenberg Neuroscience Center, and Lund Stem Cell Center, Department of Experimental Medical Science, Lund University (Lund, Sweden)**	**CIGLIANO LUISA**			ON FoodPNRR PE10: Strategic emerging topic: HUMAN WELLBEING Cluster: Health Sub Cluster: 3. Research and innovation network on food and nutrition Sustainability, Safety and Security – Working ON Foods – ON Foods PE10 - Reference spoke: 4 -
Setting up of innovative in vitro and ex-vivo model as an approach to understanding skin disease	Le malattie infiammatorie della pelle rappresentano un gruppo eterogeneo di malattie e sono caratterizzate da una risposta anormale a stimoli endogeni o esogeni, con l'inizio e la perpetuazione di un processo infiammatorio che diventa cronico con manifestazioni cliniche associate ad eritema, squame o prurito. In questo progetto, mediante l'uso di co-culture cellulari di cheratinociti, cellule dell'epidermide, cellule nervose ed immunitarie, cercheremo di comprendere le pathway molecolari alla base dell'interazione, dei processi di innervazione, di difesa ed invecchiamento della pelle. Il progetto prevederà anche l'uso di sistemi di live imaging, utilizzando principalmente il modello ex vivo, in particolare espianti di pelle. Lo scopo ultimo sarà quello di determinare i meccanismi fisiopatologici alla base dei processi di infiammazione ed in particolare della "sensitive skin", al fine di identificare composti naturali capaci di modulare tali pathways e ridurre l'infiammazione.	**Borsa finanziata PNRR ex D.M. 117 - cofinanziata da Arterra Bioscience S.p.A / Fellowship PNRR ex D.M. 117 - cofinancing by Arterra Bioscience S.p.A**	Arterra Bioscience S.p.A Via Benedetto Brin	**> 3 months abroad**	**Sede Estero: Prof. Vincenzo Fogliano e Prof. J van der Gucht University of Wageningen The Netherlands**	**IVAN CONTE**	081-679370	annalisa@arterrabio.it	PNRR tematica Evoluzione del monitoraggio della biodiversità: applicazioni a livello regionale e nazionale]
Fabrication and functional characterization of engineered living materials for biomedical applications	The proposal aims to develop new in vivo models to produce and characterize a new class of engineered living materials, integrated into the living tissues and able to modulate biological processes. This general goal will be accomplished through integrated approaches of animal, cell and molecular biology, using in vivo and in vitro models (invertebrates, cultured cells) leading to a full comprehension of the mechanisms underlying fiber biogenesis and the impact of the hybrid material on cell and animal physiology.	**Borsa finanziata su convenzione finanziata da Istituto di Scienze Applicate e Sistemi Intelligenti "Eduardo Caianiello" (ISASI-CNR) / Fellowshp on agreement with (and sustained by) Istituto di Scienze Applicate e Sistemi Intelligenti "Eduardo Caianiello" (ISASI-CNR)**	ISASI-CNR	**> 3 months abroad**	**Sedi Estero: Orit Shefi (Bar Ilan University, Tel Aviv, Israel). Eleni Stavrinidou, Linkoping University, Norrkoping, Sweden**	**CLAUDIA TORTIGLIONE**	081 8675306	c.tortiglione@isasi.cnr.it	*(Finanziamento USAF OFFICE OF SCIENTIFIC RESEARCH - AFOSR)*

	PROVISORY TITLE: Evoluzione del monitoraggio della biodiversità: applicazioni a livello regionale e nazionale /Evolution of biodiversity monitoring: at regional and national level	**Borsa finanziata PNRR ex D.M. 117 - cofinanziata da Centro Italiano Ricerche Aerospaziali (CIRA S.C.p.A.)/ Fellowship PNRR ex D.M. 117 - cofinancing by Centro Italiano Ricerche Aerospaziali (CIRA S.C.p.A.)**	Centro Italiano Ricerche Aerospaziali (CIRA S.C.p.A.)	**> 3 months abroad**	**To Be established**	**SIMONETTA FRASCHETTI**		simonetta.fraschetti@unina.it	PNRR tematica Evoluzione del monitoraggio della biodiversità: applicazioni a livello regionale e nazionale]
"BlueRemediomics: Harnessing the marine microbiome for novel sustainable biogenics and ecosystem services	****pending approvation****	**Borsa finanziata su convenzione da Stazione Zoologica "Anton Dohrn" - Napoli / Fellowshp on agreement with (and sustained by)Stazione Zoologica "Anton Dohrn" - Napoli**	Stazione Zoologica "Anton Dohrn" - Napoli	**> 3 months abroad**		**Dott. Daniele Ludicone (SZN) - Prof. DONATO GIOVANNELLI (Dept. Biology)**	+39 081 5833329	**daniele.iudicone(at)szn.it**	
**************NEW**************** Monitoring and assessment of biodiversity on hard substrate through innovative methods.** **Monitoraggio e valutazione della biodiversità su substrato duro attraverso metodi innovativi.**	Reefs include very different habitats, having in common a high structural complexity, critical functional roles, and a mostly unknown vulnerability to human stressors. Recent studies show that they are among the most endangered benthic habitats, severely threatened by climate change and human activities. However, data about their distribution and status are mostly scattered, this representing a limit for increasing their conservation and management. Ranging from shallow natural or artificial reef to coral reef in deep waters in the Mediterranean, the PhD student will assess the status of these benthic habitat through space and time comparing the outcomes of repeated surveys, video and audio recording. AI tools will be adopted by the student to complement existing approaches to assess biodiversity changes in space and time. Participating to dedicated oceanographic campaigns on vessels or robotic solutions the student will also assess the environmental settings close to the monitored reef.	**Borse finanziate PNRR / PNRR Fellowship - NBFC SPOKE 1**	**CNR-ISMAR Sede di Venezia (Referente: Fantina Madricardo) CNR-ISMAR Sede di Bologna (Referente: Federica Foglini)**	**> 3 months abroad**	**Università di Montpellier Università di Danzica**	Federica Foglini	+39 051 6398872	federica.foglini@gmail.com	FONDI PNRR CNR ISMAR NBFC SPOKE 1
Chito-oligosaccharides treatments to improve symbiotic performances in the model legume L. japonicus.	Short-chain chito-oligosaccharides (COs) are signalling molecules released by arbuscular mycorrhizas (AM) fungi. Preliminary investigations demonstrated the effectiveness of COs as stimulators of AM establishment and plant biomass production, but the mechanisms of action of COs. is largely unknown. The capacity of legumes plants to establish a mutualistic symbiotic interaction with rhizobia, makes them the major natural N-provider to the ecosystem. The main goal of this project is to study how COs impacts on the development and efficiency of symbiotic nitrogen fixation (SNF) and their effects on plant metabolism and nutrition. In particular, we will study: - Molecular analysis of COs effects on SNF, through the analysis of SNF marker gene expression in the host plant Lotus japonicus. - Impact of N and P availability on CO-dependent promotion of symbiosis. - Isolation and functional characterization of LORE1 insertion mutants of NPF, NRT2 and other genes involved in nutritional and COs responses.	**senza borsa (possono essere presenti altri sostegni economici) /without fellowship (other economic sustain may occur)**	**IBBR/CNR Via P. Castellino**	**> 3 months abroad**	Prof. Simona Radutoiu, Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark. Prof. Benoit Lacombe, CNRS, Institut National de la Recherche Agronomique/SupAgro/Universit é de Montpellier, Montpellier, France. Prof. Seppo Vainio, Developmental Biology Laboratory, University of Oulu, Oulu, Finland.	**Vladimir Valkov**	++39 081 6132434	vladimir.valkov@ibbr.cnr.it	
miRNAs deregulated in NAFLD and effect of bioactive molecules on their expression	miRNAs expression alterations are associated with different pathologies including cancer, and their expression can be used for prognostic/diagnostic purposes. Bioactive molecules introduced with food can regulate the expression of genes and miRNAs exerting beneficial effects. The project aims to evaluate deregulated miRNAs associated with NAFLD (Nonalcoholic Fatty Liver Disease) and to identify bioactive molecules present in foods capable of modulating their expression. miRNAs analysis from NAFLD and healthy subjects will be used to define a set of miRNAs associated with the disease. Then using cellular models of hepatic cancer, the ability of bioactive molecules to modulate their expression will be evaluated.	**senza borsa (possono essere presenti altri sostegni economici) /without fellowship (other economic sustain may occur)**	**IBBR-CNR - Area di Ricerca Via Pietro Castellino, 111 Napoli.**	**> 3 months abroad**	Almudena Gómez-Hernández, Biochemistry and Molecular Biology Department, School of Pharmacy, Complutense University of Madrid, Madrid, Spain Romain Barnès - Institut de Pharmacologie Moléculaire et Cellulaire, Université Côte d'Azur and CNRS, Valbonne, France	**Stefania Crispi**	off ++39081 6132622 lab ++39081 6132719	stefania.crispi@ibbr.cnr.it	
Anti-neuroinflammatory Potential of Natural Products	Neuroinflammation contributes to onset and progression of neurodegenerative diseases. Hyperactivation of microglia triggers excessive release of proinflammatory mediators that impair blood-brain barrier permeability and neuronal survival. In this research field, natural products and derivatives, constitute a "hot spot", above all for their role in regulation of the inflammatory pathway, target in these pathologies. This project aims to explore the anti-inflammatory mechanism of natural molecules, starting from a screening for the identification of active products and the development of an in vitro analysis system for characterization of innovative targets and potential pharmaceutical leads in the treatment of neurodegenerative diseases.	**senza borsa (possono essere presenti altri sostegni economici) /without fellowship (other economic sustain may occur)**	**ICB-CNR - Area di Ricerca Via Pietro Castellino, 111 Napoli.**	**> 3 months abroad**		**Carmen Gallo**	081 6132223	carmen.gallo@icb.cnr.it	
Hygienic-sanitary quality of food products: development of innovative, effective and eco-compatible bio-disinfectants	Cases of diseases caused by foods contaminated by pathogens (Salmonella spp, Escherichia coli, Listeria monocytogenes) are increasing globally, producing strong impacts on the health of consumers, manufacturers and retailers. Therefore, there is an urgent need to develop alternative strategies for sanitizing the workplaces to increase the safety of these products. In this context, the purpose of the project will be to formulate innovative, effective and eco-compatible disinfectant solutions, based on antimicrobial peptides of natural origin, aimed at abolishing the use of highly polluting and toxic chemicals currently used.	**senza borsa (possono essere presenti altri sostegni economici) /without fellowship (other economic sustain may occur)**	**IBBR-CNR - Area di Ricerca Via Pietro Castellino, 111 Napoli.**	**> 3 months abroad**	Laboratory of Molecular Cell Biomedicine, University of the Balearic Islands, 07122 Palma, Spain, Prof Pablo V. Escribá	**Gianna Palmieri**	++39-081-6132711	gianna.palmieri@ibbr.cnr.it	National Project (2023-2025): "Uso di peptidi Antimicrobici negli alimenti pronti al consumo: un aPproccio 'green' per contrAstare i risCHi di contaminazionE microbiologica e per ridurne l'impatto sulla salute pubblica (APACHE)." Ricerca Corrente 2022 IZS 10/22 RC. Unit. Funding Agency: Ministero della Salute
Chemistry signaling of the eco-physiological mechanisms in marine opisthobranchs	Opisthobranchs are molluscs with little or no shell. According to phylogenetic analyses, shell reduction is related to the evolution of signaling strategies that include color warning, anatomical structures, and several small organic compounds used during feeding, mating, and defense. Not infrequently, these molecules have also become very famous in all natural and even medical sciences, being the active components of new drugs or ligands of physiologically central receptors. It is not clear whether the acquisition of these chemicals is a prerequisite for the reduction of the shell, or if the reduction had occurred earlier. However, it is well known that the molecules used by opisthobranchs derive from selective accumulation from the environment by feeding on producer organisms or biosynthesized de novo by snails. Here it is proposed to study the biological and chemical characteristics of these molecules, as well as their biosynthetic origin. A particular attention will be paid to their eco-physiological role and potential in pharmaceutical applications	**senza borsa (possono essere presenti altri sostegni economici) /without fellowship (other economic sustain may occur)**	**Laboratorio Prof. Fontana, Dipartimento di Biologia dell'Università degli Studio di Napoli Federico II, Via Cinthia 21, Napoli Laboratorio Sostanze Naturali, Consiglio Nazionale delel Ricerche – Istituto di Chimica Biomolecolare, Via Campi Flegrei 34, Pozzuoli Napoli**	**> 3 months abroad**	MARHE, The marine Research and high Education Center, dell'Università di Bicocca, sull'isola di Magoodhoo nell'Arcipelago delle Maldive.	**Giuliana D'Ippolito**	081 8675096	gdippolito@icb.cnr.it	Fondi dell'Istituto di Chimica Biomolecolare derivanti da progetti esterni su bioprospecting e sviluppo di composti per uso medico