



HR EXCELLENCE IN RESEARCH



Co-funded by the Horizon 2020 programme
of the European Union

Results of the recruitment process for a predoctoral contract (provisional)

On 13 November 2020, a call for the recruitment of a PhD contract was open with the following terms and conditions:

PEST-BIN (Marie Skłodowska-Curie Innovation Training Network (ITN), funded by the European Commission, Horizon 2020 Program).

“Consortium objectives

Antibiotic resistance has been named as one of the greatest threats to global health by the World Health Organization. There are increasing numbers of bacterial infections not responding to known antibiotics. The humanity needs to pioneer disruptive technologies to re-gain the upper hand. To do so, PEST-BIN mobilizes six universities, three research institutes, a hospital and five private companies with one common mission: to pioneer novel technologies to fight bacterial infections. Our network will combine very diverse tools: from nano-engineering, antibiotic discovery and production, via proteomics-based diagnostics to big data analysis using artificial intelligence (AI) – all of which will contribute to new, interdisciplinary technologies. All PEST-BIN ESRs will be trained in an intersectoral environment – experiencing a tight collaboration among academia, healthcare and the private sector.

PhD position at University of the Balearic Islands

Description of the project:

The main objectives of the project are: (1) To identify the microbial composition of clinical environments as reservoirs of nosocomial infections, (2) To use comparative genomics in order to characterize the mobile genetic elements associated to virulence and antibiotic resistance genes, and (3) To detect new antibiotic resistance genes.

Specific subject description

The PhD student will work at UIB (Gomila lab group), and will perform secondments in the University of Gothenburg and Nanoxis Consulting AB, Gothenburg, Sweden. The PhD student will perform metagenomic analysis of different clinical environments, using NGS methodologies. This will provide an overview of these communities, characterizing the organisms and their role in the microbial community, as well as the antibiotic resistance potential of these communities. Protocols already developed by our group will be applied to identify and characterize isolates obtained by their whole cell MALDI-TOF MS protein profile. Pathogenic isolates will be analysed by WGS together with clinical

isolates obtained from the Sahlgrenska University Hospital, using Illumina short-read DNA sequencing and Nanopore long-read DNA sequencing. Genome sequence data will be assembled, annotated and analysed in order to perform genome comparison and genomic mining. Metabolic characterization, the mobilome, presence of plasmids and antibiotic resistance and virulence genes will be analysed. A subset of specific interesting isolates will be analysed by proteomics or proteotyping in order to get a comprehensive characterization, classification and identification of microorganisms. This will provide deep insight into the genomic potential for the metabolic processes, evolutionary relationships, adaptation mechanisms, epidemiology, virulence factors, pathogenicity islands and factors associated with the mobilomes and resistomes of bacterial pathogens.

Job assignments

- General microbiological cultivation and handling of pathogenic – Risk-Group 2 – bacterial species.
- Molecular biology experience in designing and carrying out experiments for approaches within genomics and metagenomics, including optimization of genomic DNA extractions and purifications, applicable for different NGS DNA sequencing platforms.
- MALDI-TOF MS
- Genome sequence determinations of bacteria, using Illumina short-read DNA sequencing and also Oxford Nanopore Minion long-read DNA sequencing applications.
- Genome sequence data assembly, annotation, comparative analyses and genomic mining.
- Detection of AMR and virulence through extensive database searching. Metabolic characterization.
- Preparation of manuscripts for publication in peer-review journals and presentations at international workshops and conferences.

Supervision of Research Technician personnel, students and visiting researchers.

Assessment

The candidate will be assessed according to the level of experience and expertise for attaining the goals of the project, described under “Job assignments”.

Benefits and salary

The successful candidates will receive an attractive salary in accordance with the MSCA regulations for Early Stage Researchers (<http://ec.europa.eu/research/mariecurieactions/>). The exact salary will be confirmed upon appointment and is dependent on the country correction factor (to allow for the difference in cost of living in different EU Member States). The salary includes a living allowance, a mobility allowance and a family allowance (if already married). The guaranteed PhD funding is for 36 months. All ESRs will have a personal career development plan and benefit from continuing education, secondments and training/networking events within PEST-BIN. All ESR will be guided by an academic and non-academic supervisor, experiencing a truly intersectoral working environment.

Eligibility

Applicants can be of any nationality. PEST-BIN supports a balanced gender representation by promoting genuine equal access opportunities throughout the recruitment process.

Applicants are required to undertake transnational mobility (i.e. move from one country to another) when taking up their appointment. At the time of recruitment by the host

beneficiary, ESRs must not have resided or carried out their main activity (work, studies, etc.) in the country of their host beneficiary for more than 12 months in the 3 years immediately prior to the date of appointment.

To be considered an ESR, at the time of recruitment by the host the candidates must be in the first four years (full- time equivalent) of their research careers. This is measured from the date when they obtained the degree which formally entitles them to embark on a doctorate (typically a MSc degree).

Applicants must have a diploma (or obtain a diploma before their employment starts) granting access to doctoral studies (typically a MSc degree).

Applicants must be able to demonstrate their ability to understand and express themselves in both written and spoken English at a level that is sufficiently high for them to derive the full benefit from the network training.

Appointment Procedure

The application should contain:

- A cover letter giving a brief description of previous research experience and a motivation to why you are applying.
- A CV including a list of publications.
- Contact details of two references.

Contact details for the PhD procedure Name: Margarita Gomila Ribas Position: Microbiology lecturer

E-mail: marga.gomila@uib.es

Application deadline: The application will be open until the 15th of January 2021 (included)".

The recruitment commission made the following decision:

"Below is a written justification for the ranking made by the nineteen applicants for the doctoral student position at University of the Balearic Islands, ESR11 associated to the project PEST-BIN, a Marie Skłodowska-Curie Innovation Training Network (ITN), funded by the European Commission, Horizon 2020 Program. The call was opened until the 15th of January, and the deadline extended to the 31st of January of 2021.

The members of the committee met on January 29th, 2021 and checked the adequacy of the candidates to the eligibility criteria of the call. The committee decided to assess the admitted candidate's CV to carry out the selection of the best candidate based on the following criteria:

Adequacy of the Bachelor and Master degree to the project (till 15 points)

Adequacy of the CV to the topic of the ESR – Experience of scientific theory and relevant research methods. Specific knowledge and skills within the subject area and related research areas were considered (general microbiology cultivation and handling of pathogens, molecular biology experience, genome and metagenome analysis, genome assembly, genome mining, detection of specific genes of interest, etc) (till 15 points)

English level (till 10 points)

Scientific analysis and presentation substantiated by essay, scientific publications or conferences meetings (till 20 points)

Reference letters (till 20 points)

Personal interview (till 20 points)

Based on the first four criteria, the members of the committee selected eight candidates from the nineteen to ask for references to the contacts detailed by the candidates.

From the letters received, six candidates were selected to carry out the personal interview. The interviews were celebrated on the 1st and 3rd of February, 2021. In the interview, the trajectory and previous experience of the candidates, both in experimental laboratory work and in the writing of scientific texts, as well as their motivation in the research area of the project, were assessed.

Based on these criteria, three applicants were selected and ranked as follows:

*Maria João Cardoso
Sara Mhd Al Sbei
Leonarda Acha Alarcon”.*

Taking into account the recruitment commission outcome, the following candidate is proposed for the abovementioned PhD contract:

Maria João Cardoso

And the following sorted list of substitute candidates:

- 1) Sara Mhd Al Sbei
- 2) Leonarda Acha Alarcon

Complaints or requests of information regarding the recruitment commission decision can be sent to osr.seccio-rhfr@uib.es before 15 March 2021.

Signed,

Enrique García Ríaza.
Vice-Rector for Research and Internationalization,

Palma, 04/03/2021