BIOMEDICAL SCIENCE FOR THE BENEFIT OF SOCIETY

"PhD student – Design of Biological Systems Lab"
Centre for Genomic Regulation (CRG)

The Institute

The Centre for Genomic Regulation (CRG) is an international biomedical research institute of excellence, based in Barcelona, Spain, with more than 400 scientists from 44 countries. The CRG is composed by an interdisciplinary, motivated and creative scientific team which is supported both by a flexible and efficient administration and by high-end and innovative technologies.

In April 2021, the Centre for Genomic Regulation (CRG) received the renewal of the 'HR Excellence in Research' Award from the European Commission. This is a recognition of the Institute's commitment to developing an HR Strategy for Researchers, designed to bring the practices and procedures in line with the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (Charter and Code).

Please, check out our Recruitment Policy

The role

This PhD position offers the opportunity to develop a four-year doctoral thesis in synthetic biology, focused on the design and application of bacteria-based therapeutics using *Mycoplasma pneumoniae* for the treatment of idiopathic lung fibrosis. The student will actively participate in all aspects of research, including literature review, experimental design, execution of laboratory experiments, data analysis, manuscript writing, and presentation of results to supervisors and peers. The role is designed to provide hands-on experience in a cutting-edge translational research project while fostering scientific discussion, critical thinking, and professional development within the department.

About the lab

The Systems and Synthetic Biology (SSB) program at CRG is transforming molecular biology into a predictive engineering science. The Serrano Lab – Design of Biological Systems, part of the SSB department, is a multidisciplinary team combining both wet and dry lab expertise to improve and validate synthetic ecosystems.
The lab focuses on the quantitative understanding of the minimal organism *Mycoplasma pneumoniae* to enable rational engineering for therapeutic applications. With an interdisciplinary team of over 15 researchers, the group has, over more than a decade, characterized this model organism at the molecular level. By integrating "-omics" technologies with computational modeling, the team aims to a bacterial chassis for lung therapy or vaccination.
The modelling team develops and applies computational tools such as FoldX and ModelX to predict protein structure, stability, and interactions, supporting the design of engineered strains with therapeutic potential.

Whom would we like to hire?
Professional experience

Must Have

- You have 2 years of hands-on experience in biotechnology, microbiology, and laboratory techniques
- You have proven experience in synthetic biology, molecular biology, and cellular biology, with a strong track record in experimental design and laboratory execution
- You are fluent in English

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Desirable but not required/ Nice to have

- Previous experience with mice handling in a laboratory setting
- Proven peer-reviewed publications in recognized scientific journals

Education and training

- You hold a bachelor's degree in molecular biology, Biotechnology, or related fields and a master's degree in science within the European Higher Education System (minimum 300ECTS) or equivalent by October 2026

Languages

- You are proficient in English
- Spanish and/or Catalan is a plus

Technical skills

- You have practical knowledge of PCR, qPCR, cloning techniques (Gibson, KDL), Western blotting, cell culture, and general microbiology techniques
- You have knowledge of R and Python for data analysis and bioinformatics applications
- You have Advanced proficiency in MS Office
- You have experience in microbial genetics and antimicrobial resistance, and the development of innovative therapeutic strategies
- You have participated in Synthetic biology projects

Competences

- Strong organizational skills
- Effective communication skills, both written and verbal, for presenting data and collaborating within interdisciplinary teams
- Sound scientific judgment to evaluate experimental design, interpret results, and guide decision-making
- Independence in experimental design and data analysis, with the ability to plan, execute, and troubleshoot experiments autonomously
- Ability to work simultaneously on multiple projects, balancing priorities while maintaining high-quality outputs

The Offer – Working Conditions

- **Contract duration:** Four years, funded through an FPI fellowship from the Ministerio de Ciencia, Innovación y Universidades (MCIU).
- **Estimated annual gross salary**: **:** Salary is commensurate with qualifications and consistent with our pay scales
- **Target start date**: October 2026.

We provide a highly stimulating environment with state-of-the-art infrastructures, and unique professional career development opportunities. To check out our training and development portfolio, please visit our website in the training section.

We offer and **promote a diverse and inclusive environment** and welcomes applicants regardless of age, disability, gender, nationality, ethnicity, religion, sexual orientation or gender identity.

The **CRG is committed to reconcile a work and family life** of its employees and are offering extended vacation period and the possibility to benefit from flexible working hours.

Application Procedure

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All applications must include:

1. A motivation letter addressed to Dr Luis Serrano
2. A complete CV including contact details.
3. Contact details of two referees.

All applications must be addressed to Dr. Luis Serrano and be submitted online on the CRG Career site - http://www.crg.eu/en/content/careers/job-opportunities

Selection Process

- **Pre-selection**: The pre-selection process will be based on qualifications and expertise reflected on the candidates CVS. It will be merit-based.

- **Interview**: Preselected candidates will be interviewed by the Hiring Manager of the position and a selection panel if required.

- **Offer Letter**: Once the successful candidate is identified the People department will send a Job Offer, specifying the start day, salary, working conditions, among other important details.

Deadline: Please submit your application by July 3, 2026.

Suggestions: The CRG believes in **ongoing improvement** and promotes a **culture of feedback**. This is one of the reasons we have in place, at your disposal as a candidate, a mechanism to gather your suggestions/complaints concerning your candidate experience in our recruitment processes. Your feedback really matters to us in our aim at creating a **positive candidate journey**. You can make a difference and help us improve by letting us know your suggestions through the following form.

GOBIERNO DE ESPAÑA MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

AGENCIA ESTATAL DE INVESTIGACIÓN

HR EXCELLENCE IN RESEARCH

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