BIOMEDICAL SCIENCE FOR THE BENEFIT OF SOCIETY

Bioinformatician in the group *Evolutionary Processes Modeling*

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 of 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.

Please, check out our Recruitment Policy

The role

We are seeking a highly motivated bioinformatician to join the *Evolutionary Processes Modeling* group. The selected candidate will be responsible for the analysis of DNA sequencing data derived from a unique cohort of animal tumors. Responsibilities will include aligning DNA sequencing reads to reference genome scaffolds, calling mutations and conducting mutation analysis using diverse bioinformatics tools.

About the group

Cancer is a genetic disease, shaped by evolutionary forces such as mutation, natural selection and random genetic drift. Our research focuses on understanding how the evolution and persistence of cancer cell populations are influenced by the influx of mutations and by selective pressures, as inferred from mutation data. To address these questions, we develop mathematical and computational approaches to estimate mutation probabilities and selection.

Tumor mutations are caused by diverse mutational processes, which can be identified through DNA sequencing data (bioRxiv, 2023, bioRxiv, 2025_1). Although most mutations are neutral and do not contribute to tumor development, they can provide insights into tumor growth dynamics (eLife, 2024). Among the functionally relevant mutations, tumors not only exhibit positively selected driver mutations (Nature Genetics, 2020), but there also exists a small fraction of mutations that tumors cannot tolerate without compromising their viability (Nature Genetics, 2017). Quantifying the strength of selection helps prioritize both coding and non-coding genomic regions according to their relevance to disease, ultimately guiding therapeutic development.

Beyond cancer, we are also interested in studying mutation rates and selection in the context of human germline variation. This includes analysis of both polymorphisms (Nature Communications, 2025; Nature Genetics, 2017; Molecular Biology and Evolution, 2019) and *de novo* mutations (Nature Communications, 2020). A major focus of our group is characterizing purifying selection in humans and across species, while accounting for both mutation mechanisms and genetic drift.

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The Evolutionary Processes Modeling lab was established in October 2018 and is part of the "Computational Biology and Health Genomics" program at the CRG. Further information can be found on the Weghorn Lab website and at www.crg.eu/en/programmes-groups/weghorn-lab.

Whom would we like to hire?

Professional experience

- You have experience with computer programming
- Experience with biological data analysis is a plus

Education and training

- You have a bachelor's or master's degree in bioinformatics, computer science or a related discipline

Languages

- You are fluent in English

Technical skills

- You must be able to program in python, R or a similar language

Competences

- You have highly developed organization skills
- You have good communication skills

The Offer – Working Conditions

- **Contract duration:** Technical and scientific activities contract linked to the project duration (estimated duration of 6 months).
- **Estimated annual gross salary:** Salary is commensurate with qualifications and consistent with our pay scales.
- **Target start date:** April 1st, 2026.

We provide a highly stimulating environment with state-of-the-art infrastructure 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 welcome 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 is offering extended vacation periods and the possibility to benefit from flexible working hours.

Application Procedure

All applications must include:

1. A motivation letter addressed to Dr Donate Weghorn.
2. A complete CV.
3. Contact details of two referees.

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

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Selection Process

- **Pre-selection**: The pre-selection process will be based on qualifications and expertise reflected in the candidates' CVs. It will be merit-based.
- **Interview**: Pre-selected 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 **March 31, 2026**. Candidate screening will start immediately after publication of the job ad and continue until the position is filled.

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.

HR EXCELLENCE IN RESEARCH

EXCELENCIA SEVERO OCHOA

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