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centre nacional d'anàlisi genòmica
centro nacional de análisis genómico

CRG
Centre for Genomic Regulation

"Two PhD Student Positions"

Centro Nacional de Análisis Genómico (CNAG-CRG)

The Institute

The Centro Nacional de Análisis Genómico (CNAG-CRG) is one of the largest Genome Sequencing Centers in Europe. CNAG-CRG researchers participate in major International Genomic Initiatives such as the International Cancer Genome Consortium (ICGC), the International Human Epigenome Consortium (IHEC), the International Rare Diseases Research Consortium (IRDiRC), the Human Cell Atlas (HCA), the European Infrastructure for life-science information (ELIXIR), as well as in several EU-funded projects. The CNAG-CRG aims to carry out large-scale projects in DNA/RNA sequence analysis for the improvement of quality of life in collaboration with the Spanish, European and International Research Community. The CNAG-CRG operates 6 Illumina and 4 Oxford Nanopore sequencing instruments together with an outstanding computing infrastructure (7.6 petabyte of data storage and 3472 cores of computing). The operation is certified ISO 9001 and accredited ISO 17025 and serves to deliver standardized, high quality data for research and clinics. Single-cell genomics and long-read sequencing are strategic priorities for CNAG-CRG.

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

In November 2013, the Centre for Genomic Regulation (CRG) received the 'HR Excellence in Research' logo 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

We have openings for two PhD students through the EU-funded ERC-Synergy project BCLL@las. The BCLL@las project aims to make significant in ways into the understanding of chronic lymphocytic leukaemia (CLL) by applying multi-omic single-cell characterisation of B-cells before and throughout the course of this disease. Topics for the two PhD student positions include the development of statistical methods to integrate multi-omic single-cell and spatial data and the development of inference systems across data types, *e.g.* inference of nuclear conformation from low-level epigenetic data such as DNA methylation or ATAC-seq. We are looking for highly motivated and creative thinking individuals who are interested in working in an environment where the technical sophistication of single-cell analysis technology meets innovative approaches for interpreting data and generating new knowledge.

About the team/ lab/ department

These two PhD candidates will be integrated into the BCLL@las project of the Biomedical Genomics Group lead by Dr. Ivo Gut and the Single-Cell Genomics Team lead by Dr. Holger Heyn. Dr. Ivo Gut is the CNAG-CRG director and head of the Biomedical Genomics group. He coordinates the BCLL@las project and the

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European Advanced Sequencing Infrastructure project (EASI-Genomics),funded by the European Commission. Dr. Ivo Gut participates in H2020 projects B-CAST, SPIDIA-4P, ELIXIR-ACCELERATE, SOLVE-RD, EJP-RD and EuCanCan. In addition, the CNAG-CRG participates in major Spanish initiatives in Personalized Medicine such as the PERIS projects MedPERCAN and URDCat, the 1,000 Catalan Genomes project, and the Navarra project on personalized medicine. The Biomedical Genomics Group focusses on furthering the understanding of diseases using different types of genomic data, novel statistical approaches and bioinformatics. Big data approaches are used to identify patterns on genome, transcriptome and epigenome level that correlate with a disease and the evolution across the course of the disease. The objective is to answer questions that go beyond the initial hypotheses that underlay the studies to shed light on how genome sequence, structure and usage relates to disease, disease initiation, disease progression and disease mechanisms. The group also studies genomic features related to disease at different cellular levels. The disease areas range from rare to common disorders including cancer.

Web: https://www.cnag.crg.eu/teams/genome-research-unit/biomedical-genomics-group

The Single-Cell Genomics Team is dedicated to advance genome research of single cells. The mission of the group is the implementation of cutting-edge single-cell sequencing technologies and their application in a research and translational context. The group focuses on the systematic integration of transcriptional and epigenetic data from individual cells to elucidate causalities underlying phenotype formation and diseases. We successfully established sequencing protocols to quantify thousands of single cells and developed computational pipelines to deconvolute tissue composition and track transcriptional dynamics. Our international team joins computational, technical and biological knowledge in order to establish and apply best practices in single-cell research. The group combines collaborative research, development activities and follows an independent research line on translational cancer research. We are member of the Human Cell Atlas Project.
Web: http://www.cnag.cat/teams/genome-research-unit/single-cell-genomics-team

Whom would we like to hire?

Must Have

- You have completed a Masters degree in Bioinformatics, Mathematics, Statistics or similar

Professional experience

- You are competent in Python, Perl or R
- You have good knowledge of Computational Biology
- Experience working with remote distributed job systems (e.g Slurm)

Languages

- You are fluent in English

Desirable but not required

- Experience in single-cell analysis

The Offer

- **Contract duration:** 4 year PhD position
- **Estimated annual gross salary:** Salary is commensurate with qualifications and consistent with our pay scales.
- **Target start date:** 1st September 2019

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CRG
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We provide a highly stimulating environment with state-of-the-art infrastructures, and unique professional career development opportunities.

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

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

All applications must include:

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

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

Deadline: Please submit your application by 31st of July, 2019

HR EXCELLENCE IN RESEARCH

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