



BIOMEDICAL SCIENCE FOR THE BENEFIT OF SOCIETY

**“Exploring the evolution of vertebrate early development using single-cell genomics – PhD student”**

*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 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 are seeking a highly motivated candidate to join our teams to work on an interdisciplinary project (experimental and computational) involving single-cell genomics and chromatin profiling in different chordate species. The research program for this position focuses on elucidating the origin and evolution of the regulatory programs controlling vertebrate morphogenesis and cell differentiation. To this end, you will apply and analyse advanced functional genomics to characterize cell types and regulatory genome features in vertebrate and non-vertebrate chordate species. Specifically, this involves: (i) scRNAseq to define cell type-specific gene expression across multiple developmental stages, and (ii) bulk ChIP-seq and ATAC-seq to map chromatin states and regulatory element usage. The candidate will spearhead the analysis, integration, and interpretation of these comparative omics datasets.

## About the team

Our groups study genome regulation from an evolutionary systems perspective. In particular, we are interested in deciphering the evolution of animal cell type developmental programs and the regulatory mechanisms underlying these programs. To this end, we apply advanced single-cell genomics and chromatin experimental methods to molecularly dissect cell types and epigenomic landscapes in phylogenetically diverse organisms. We also develop computational tools to integrate these diverse data sources into models of cell type gene regulatory networks and we use phylogenetic methods to comparatively analyze these models. Our recent work has provided the first whole-organism cell type atlases in different species and mapped key regulatory features underlying both development and cell diversity in non-model invertebrate organisms and the origin of vertebrates (see "Relevant Publications" below). By analysing the development of chordate species at single-cell resolution, we now aim at dissecting the evolution of vertebrate cellular ontogenies and their underlying gene regulatory networks.

For further information you can directly email the PIs of the groups: [arnau.sebe@crg.eu](mailto:arnau.sebe@crg.eu) [manuel.irimia@crg.eu](mailto:manuel.irimia@crg.eu)

## Whom would we like to hire?

### Professional experience

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### Must Have

- You have experience in computational biology, in particular genomics and transcriptomics data analysis.
- You have experience working in Unix/Linux environments.
- You have experience in R statistical language.

### Desirable but not required

- You have hands-on experience in basic molecular biology.
- You have hands-on experience in basic genomics workflows (e.g. library preparation).
- You have experience in chromatin experimental methods (e.g. ChIP-seq, ATAC).

### Education and training

- You hold a master degree in Biology, Bioinformatics or similar

### Languages

- You have English fluency

### Competences

- You have highly developed organization and coordination skills
- You have creativity and intellectual independence
- You have dedication, motivation, and rigor in scientific pursuits
- You have capacity to work as part of a collaborative team

### The Offer – Working Conditions

- **Contract duration:** 4 years PhD position
- **Estimated annual gross salary:** Salary is commensurate with qualifications and consistent with our pay scales.
- **Target start date:** September-20 to January-21

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, 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. A. Sebé-Pedrós/Dr. Manuel Irimia.
2. A complete CV including contact details.
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>

## 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 contacted to coordinate an interview with the PI.
- **Offer Letter:** Once the successful candidate is identified the Human Resources department will send a Job Offer, specifying the start day, salary, working conditions, among other important details.

**Deadline:** Please submit your application by September 15<sup>th</sup> 2020.



HR EXCELLENCE IN RESEARCH

