

## Postdoctoral Researcher in Cancer Bioinformatics

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| <b>EMPLOYER</b>       | Institut Paoli Calmettes                                   |
| <b>FUNDED BY</b>      | Cancéropôle PACA   |
| <b>RESPONSIBLE TO</b> | Dr Pedro Ballester   |
| <b>CONTRACT</b>       | Full-time postdoctoral for 1.5 years in the first instance |
| <b>CLOSING DATE</b>   | Monday 14 November 2016                                    |
| <b>STARTING DATE</b>  | January 2017   |

### Working environment

The Cancer Research Center of Marseille (CRCM) is the basic science and translational research unit of the private cancer hospital Institut Paoli Calmettes (IPC). Also affiliated to INSERM, CNRS and Aix-Marseille University, the 270 researchers working at the CRCM form a strongly multi-disciplinary research environment characterized by frequent and close collaborations with IPC clinicians. IPC and CRCM form part of the comprehensive cancer centre Marseille SIRIC (<http://www.siric-marseille.fr/Les-SIRICS.html>). Further information available at [http://crcm.marseille.inserm.fr/uploads/media/presentation\\_CRCM\\_2015\\_EN.pdf](http://crcm.marseille.inserm.fr/uploads/media/presentation_CRCM_2015_EN.pdf)

### Project

This project aims at identifying predictive markers of *ex vivo* drug sensitivity in Acute Myeloid Leukemia (AML). We have molecularly profiled over 100 AML tumours so far, each tested *ex vivo* against 73 selected drugs (150 new profiled tumours will be available to this project in the next two years). The successful candidate will investigate the application of a range of machine learning methods to predict which drugs are most effective for a given AML tumour exploiting in-house and public data resources. This research will require interacting closely with the oncologists, cancer biologists and in-house technological platforms acquiring and profiling these tumour samples (e.g. AML-specific somatic DNA mutations, cytogenetic features and methylation patterns in gene promoters). Occasional help with the primary and secondary analysis of molecular profiling data might be required. On the other hand, a number of publications are expected to arise soon from this project. Thus, the post holder is also expected to be proficient in writing this type of research for publication.

### Selection criteria – Essential

- A PhD degree with a major focus on computational analysis of experimental data, preferably in an area directly relevant to the project.
- Experienced in the application of machine learning to solve real-world problems in the context of biomedical research.
- Skilled in the implementation of R or Python scripts for scientific data analysis.
- Ability to undertake high quality scientific research as demonstrated by publications.
- Ability to communicate effectively in English, both orally and in writing.

### Selection criteria – Desirable

- A track record of publications in AML, modelling of cancer pharmacogenomics and/or biomarker discovery will be a strong advantage.
- Experienced or trained in handling, integrating, processing and analysing NGS data (especially DNA-seq, RNA-seq and ChIP-seq).
- Software engineering skills using C++, C and/or Python (numPy/SciPy/scikit-learn) including version control tools (e.g. git or mercurial).

- Working knowledge of open-source cheminformatics toolkits (e.g. RDKit or OpenBabel) and medicinal chemistry databases (e.g. ChEMBL and ZINC).
- Hands-on experience in the design and implementation of relational databases using MySQL and/or PostgreSQL as well as in web programming.

### **What we offer**

The successful candidate will join the Ballester group at the CRCM. This is a recently created group, which will have nine members with the arrival of the post holder in January 2017 (group leader, three postdoctoral researchers, four PhD students and one master student). Thus, there will be opportunities for the post holder to collaborate with other team members.

The post holder will receive a net monthly salary of €2,000. The contract will be for 1.5 years in the first instance, with possibility of extension.

The successful candidate can be supported to apply for a permanent research scientist position (e.g. Inserm CR2 or CNRS CR2) to be held within the Ballester group. Currently, three CRCM candidates per year are successful in being awarded these permanent positions. In terms of quality of life, the CRCM is located in Marseille and thus the post holder will enjoy living in an exciting multi-cultural city right by the French Mediterranean coast.

### **How to apply**

Candidates must send a CV including a list of peer-reviewed publications and a covering letter (maximum two pages) to [pedro.ballester@inserm.fr](mailto:pedro.ballester@inserm.fr) with subject line "cancer bioinformatics position". This letter will explain how they meet the essential selection criteria, which desirable selection criteria are also met and how this position would fit in their future career plans. This email must also state the names and emails of three scientists familiar with their research, who are willing to provide a reference. Please also mention in the letter where did you see this position advertised.