

Postdoctoral Researcher in Computational Drug Design

EMPLOYER	INSERM
FUNDED BY	The French National Research Agency (ANR)
RESPONSIBLE TO	Dr Pedro Ballester
CONTRACT	Full-time postdoctoral researcher for 2 years
NET MONTHLY SALARY	€2,300-€2,600
CLOSING DATE	Thursday 31 August 2017
STARTING DATE	November 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 250 researchers working at the CRCM form a strongly multi-disciplinary research environment characterized by 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?lang=en>). Further information available at http://crcm.marseille.inserm.fr/fileadmin/Recherche/CRCM_Plaquette.pdf

Project

This project aims at investigating machine-learning models able to identify drug-like molecules with previously unknown activity on a given cancer cell line. The most promising predictions will be experimentally validated by internal and external collaborators. The targets of the resulting phenotypic hits will be identified using existing molecular target prediction tools, including some developed in-house, to make an initial assessment of their efficacy and possible side-effects. A similar approach will be followed to identify synergetic drug combinations on a given cancer cell line. This project was funded by the competitive ANR Tremplin-ERC programme: <http://www.agence-nationale-recherche.fr/en/projects-and-results/archive-of-calls-for-proposals/aap-en/tremplin-erc-t-erc-second-call-2017/>

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.
- 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 relevant to this project will be a strong advantage.
- Working knowledge of open-source chemical informatics toolkits (e.g. RDKit or OpenBabel) and medicinal chemistry databases (e.g. ChEMBL, PubChem and ZINC).
- Prior experience in applying machine learning algorithms to drug design, e.g. QSAR.
- Familiarity with cancer pharmacogenomics databases (e.g. GDSC, CCLE or CTRP).

- Software engineering skills using C++, C and/or Python (numPy/SciPy/scikit-learn) including version control tools (e.g. git or mercurial).
- Hands-on experience in the design and implementation of relational databases as well as in web programming to implement selected models as webservers.

What we offer

The successful candidate will join the Ballester group at the CRCM. This is a recently created group, which will have five members with the arrival of the post holder in November 2017 (group leader, two postdoctoral researchers and two PhD students). As group members work on closely related projects, the candidate will have continuous feedback on her/his project and opportunities to contribute to the project of other team members. Links to further information about this group can be found in this webpage: <https://pjballester.wordpress.com/links/>

The contract will be for 2 years. The net monthly salary of the post holder will be between €2,300 and €2,600 depending on experience.

Furthermore, the successful candidate can be supported to apply for a permanent research scientist position (e.g. Inserm CR or CNRS CR) 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 with subject line “computational drug design 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. In addition, the names and emails of three scientists, who are familiar with the candidate’s research and are willing to provide a reference, must be provided. The letter should also mention where the advertised position was seen.