



France Médecine Génomique 2025

We are looking for a :

## Postdoctoral Fellow in bioinformatics (M/F)

### CONTEXT

CRefIX (Centre de REFérence, d'Innovation, d'eXpertise et de transfert) is, along with the sequencing platforms (SeqOIA and Auragen) and the data analysis center (CAD), one of the three key structures of the France Médecine Génomique 2025 plan to deploy genomic analysis in healthcare ([FMG2025 plan website](#)). CRefIX is a joint services unit (US 039) involving Inserm, CEA and INRIA, and is housed partly at CEA's Centre National de Recherche en Génomique Humaine (CNRGH) in Evry (91), and partly at Inria's laboratory in Montbonnot Saint Martin (Grenoble). This center, dedicated to the development of the medicine of the future, will 1) establish the standards needed to ensure the reproducibility and interoperability of data between the plan's platforms, and 2) stimulate innovation and accelerate technology transfer in conjunction with industry, in order to ensure the competitiveness of the plan and develop a national industrial sector ([CRefIX website](#)).

CRefIX identifies the plan's technical and operational hurdles and evaluates the technological solutions that could overcome them (e.g., inclusion of FFPE samples in the plan, micro biopsy processing, etc.). A significant part of CRefIX's activities also concern the evaluation, or even co-development, of emerging technologies and the contribution they could make to the plan and genomic medicine in general (sequencing, extraction and library preparation technologies, etc.). These projects are based on collaborations with various academic centers in the field, as well as with private players.

The team consists of 3 molecular biology engineers, 3 bioinformatics engineers, a project manager, an assistant and 2 directors.

CRefIX is currently looking for a post-doctoral fellow to evaluate and implement a bioinformatics pipeline to analyze structural variants from short-read data. The position is based at the CNRGH site in Evry, with frequent travel (mission) to the Inria site in Montbonnot-Saint-Martin (near Grenoble).

### DOMAIN

***Informatics, Bioinformatics***

### JOB TITLE

***Postdoctoral Fellow (M/F)***

### POSITION STATUS

***Executive***

### CONTRACT LENGTH

***12 months***

### GROSS SALARY

***From 46.000 euros***

### HOST STRUCTURE

***Unité de Services 039 CRefIX (Cea, Inserm, Inria)***

### LOCATION

***Centre National de la Recherche en Génomique Humaine (CNRGH, Evry)***

## POST-DOCTORAL PROJECT

The analysis of structural variants (SVs) using data from short reads sequencing, such as the Illumina technology, has only very partially been transferred from the field of research to that of healthcare. For certain pathologies, including sarcomas in particular, the characterisation of SVs could perhaps make it possible to identify causal events that are more relevant than classic SNV-type drivers. Certain subtypes of sarcoma, such as UPS (Undifferentiated Pleiomorphic Sarcomas) or LMS (Leiomyosarcomas), commonly lack classic driver events and it is suspected that the founding events are in fact genomic rearrangements (SVs).

The aim of this post-doctoral project is to assess the contribution of structural variant analysis to the characterisation and management of UPS and LMS sarcomas. The first part will be devoted to setting up dedicated pipelines inspired in particular by those defined by the PCAWG (<https://www.nature.com/articles/s41586-019-1913-9>) and to comparing several existing software packages (Delly, Manta, etc.) on WGS data already available at Crefix (collaboration with the Centre Léon Bérard (Lyon) and the Institut Bergonié (Bordeaux)). The second part will be devoted to a more in-depth analysis of the SVs detected, with a particular focus on clustering and SV signatures in order to identify recurring patterns in the samples analysed. The postdoc's work should lead to a publication of a methodological and/or biological nature, depending on the direction given by the postdoc.

The position is based in Evry, with the possibility of working from Paris 10e and teleworking.

## REQUIRED PROFIL

### Formation

Holders of a doctorate, you will need to demonstrate training in computer science or bioinformatics, followed by significant experience in data analysis in the field of NGS.

### Required Skills

#### Abilities :

- rigor and methodology;
- attraction to editorial work;
- ability to understand scientific issues;
- ability to communicate within multidisciplinary teams.

#### Technical knowledge :

- good knowledge of the field of bioinformatics;
- good knowledge of Unix and computing clusters (Slurm);
- mastery of NGS data processing tools (WGS) preferably in human somatic genomics (cancer);
- good level of English.