Appel à projets pour bourses post-doctorales

Call for projects with post-doctoral positions

A KEY INITIATIVE MUSE

MUSE

MONTPELLIER UNIVERSITÉ D'EXCELLENCE

The Data & Life Sciences initiative aims at offering services to life scientists in Montpellier and at contributing to the development of methods and software to analyze large-scale data in the fields of health, environment and agronomy.

kim-dataandlifesciences.umontpellier.fr

The initiative is offering **three 1-year postdoctoral positions** in key domains that are currently not sufficiently represented in the community. **The aim is to develop methods of data processing, techniques that answer questions on datasets available in the community.**

The three thematic fields of the call are

- **Artificial intelligence and machine learning for personalized medicine**

This includes, but is not limited to, the **development of specific learning methods** such as neural networks, convolution networks, dimension reduction, regularization, clustering... **for the analysis of heterogeneous medical data** like for instance the combination of images and DNA sequences, multi-omics dataset and standard medical database... or any other kinds of high-dimensional medical datasets. Some learning strategies are well established for one type of dataset (for instance neural nets for images) but a current challenge is to take benefit of different types of information.

- **Statistical methods for pan-genomic data**

This includes, but is not limited to, **tackling current questions in population genetic inference**: inferring demographic history, detecting signatures of natural selection, predicting functional consequences of mutations... **on large-scale genetic data**. Current available methodologies do not scale-up and new strategies should be considered. For such large dataset, these **statistical tools** have to address the questions of correlations between loci and/or of some potential high levels of parental relatedness (consanguinity).

- **Medical data storage and organization**

Given a patient, multiple kinds of data are collected. Organizing this data collection is a challenge and specific methodologies are needed. Existing proposals have to be adapted in order to produce smart data from big data for addressing biological questions and then supplying researchers but also to help practicians visualize some information. Methodologically thinking, this includes, but is not limited to, designing and organizing data collection, computing resources needed for data acquisition and storage, database management, image and text coding, visualization and search.

Applications procedure

Applications should be submitted by members of a research unit belonging to the MUSE consortium to : imag-kimdls@umontpellier.fr **before March 1st 2019.**

The post-doctoral candidate may be identified in the application, or not.

Preference will be given to projects with a candidate already identified. If a project without identified post-doctoral candidate is selected by the board, the applicant will have to select a candidate and to obtain validation of this candidate by the KIM board.

Inter-disciplinary collaborations would be considered with great interest.

The application should include

- A description of the project (3-4 pages max), including its adequacy to one of the above thematic fields,
- A short CV (1-page max) of the PI,
- The post-doc candidate's CV if known,
- The visa of the director of the research unit (UMR, EA...).

For projects submitted without identified post-doctoral candidates, the CV of the post-doc will have to be sent **by June 1st 2019**.
The starting dates of the projects are flexible but should not exceed October 2019.

Applications will be evaluated by one external reviewer and one member of the committee, with final decision taken by the committee. Particular attention will be given to the originality of the project.

Schedule:

March 1st 2019	deadline for applications
April 1st 2019	answers to applicants
May 1st 2019	starting date of first projects
June 1st 2019	deadline for sending a post-doc cv to the board for validation
October 1st 2019	maximal starting date of projects

Contact for more information on this call
alice.cleynen@umontpellier.fr