2018-00368 - Image analysis and modeling in multicellular tissues.

**Contract type**: Public service fixed-term contract  
**Level of qualifications required**: PhD or equivalent  
**Function**: Post-Doctoral Research Visit

**Context**

The position will be under the direction of D. Drasdo. It includes a collaboration with Hôpital Universitaire La Pitié-Salpêtrière, Paris, Inst. Curie, and the INRIA team Monc / Bordeaux within a project funded by the Natl. Inst. of Cancer in France. This requires regular meetings with medical doctors.

**Assignment**

The main objective is analysis and modeling of growth and therapy approaches of primary central nervous system lymphomas (PCNSL). Main focus of our team will be on the microscopic (histological) level.

This requires training in our group-multicellular simulation software TiSim (which might include a course in Dortmund / Germany). The software is written in C++ hence C++ must be learned as required to deal with the existing code.

The recruited person should meet with clinicians and coordinate our image analysis and modeling activities with the INRIA Monc team in Bordeaux.

**Main activities**

- Image analysis of clinical histological images and images from non-invasive imaging modalities.
- Modeling at small scale, potentially also at larger scale.
- Models at small scales will be based on agent-based models. New model component need to be integrated into our software TiSim, that already includes many simulation components.
- Interaction and coordination of our groups’ activities with our partners from Hôpital Universitaire La Pitié Salpêtrière, Paris, Inst. Curie, and the INRIA team Monc / Bordeaux.
- Reporting about our activities.

**Skills**

Technical skills and level required: mathematical modeling of biological / medical systems, image analysis, programming, ideally in C/C++ and matlab because of existing codes. Operating systems are linux, windows and MacOX

Languages: English mandatory, French would be desirable but not mandatory.

People should be open to other scientific cultures and an international team.

**Benefits package**

- Subsidised catering service
- Partially-reimbursed public transport
Remuneration

- Location: Paris 12ème
- Gross Salary per month: according to experience

Security and defense procedure:

This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST).

Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

General Information

- **Theme/Domain**: Modeling and Control for Life Sciences
  Scientific computing (BAP E)
- **Town/city**: Paris
- **Inria Center**: CRI de Paris
- **Starting date**: 4/1/18
- **Duration of contract**: 1 year, 6 months
- **Deadline to apply**: 3/31/18

Contacts

- **Inria Team**: MAMBA
- **Recruiter**: Drasdo Dirk / dirk.drasdo@inria.fr

The keys to success

People should be ready to work in an interdisciplinary team and communicate with biologists and medical doctors. Large level of independency would be welcome.

Background and knowledge in interdisciplinary research in relation to biology or/and medicine, modeling in biological systems, and knowledge in programming is required. Ideally this is mathlab, C++, Python ...

The candidate will have to extend existing code in C++.

Conditions for application

**Defence Security**:
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**Recruitment Policy**: As part of its diversity policy, all Inria positions are accessible to people with disabilities.

**Warning**: you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.