Post-doc position in modelling of tumour growth and/or statistical physics and/or image analysis

A beginner post-doc position opens from September 1st, 2019 in the team “Modelling of biological systems” (2 permanent researchers) of the laboratory “Imaging and modelling in neurobiology and oncology” (IMNC, in Orsay, 25km southwest from Paris). The candidate will take part in the research projects of the team, centred on the theoretical study of processes of tumour growth, especially in the central nervous system.

The candidate will contribute in one or several research axes that the team develops:
— analysis of images obtained by scanning of histology slides (tissue samples extracted from a tumour by biopsy), with a planned development of machine learning techniques,
— software development about the previous activity, with possible industrial transfer,
— mathematical modelling of clinical data (patients follow-up in collaboration with clinicians) or biological data (in vitro experiments),
— statistical physics (collective behaviour of populations of interacting cells).

The candidate must hold a PhD (in theoretical physics, general physics, computer science, electrical engineering, applied mathematics...), have an interest in biology or medicine, and have proven skills in computer programming. Mastering written and spoken English is essential.

The IMNC laboratory (CNRS, University Paris-Saclay and University of Paris) puts into practice interdisciplinary research by gathering physicists, biologists and clinicians around questions of oncology (fundamental and with therapeutic aims). Its research activities deal with three main domains: theoretical modelling, development of imaging devices (radioisotopes and optics), and radiotherapy.

The contract will last until end of August 2021 and will be funded by the CNRS. Starting date is 1st of September, 2019 (possibly later). Monthly gross salary will be 2700 to 3800 euros according to experience (evaluated in agreement with the salary chart of the CNRS).

Contact: {deroulers, badoual}@imnc.in2p3.fr  Website of the team  IMNC’s website

To apply, please send your resume, a list of publications with the selection of one or two of them (explain your contribution to them), the contact information of two references, and a motivation letter.

Some references:
• Deroulers et al., Automatic quantification of the microvascular density on whole slide images, applied to paediatric brain tumours, Diagnostic Pathology, 2 209 (2016).


• Deroulers et al., Analyzing huge pathology images with open source software, Diagn. Pathol 8 92 (2013).

• Ascolani et al., Exclusion processes: short range correlations induced by adhesion and contact interactions, Phys. Rev. E 87 012702 (2013).