

Recrutement prévu dans le cadre du contrat recherche ANR S-Keloid

Job title	Postdoctoral Fellow
Ref	offreEmploi_2024.06.Postdoc_projet ANR S-Keloid
Job type (PhD, Post-doc, Engineer)	Post-doc
Contract duration (months)	18 months
Salary	Between €1839,75-€2282,87 net/month (depending on qualifications)
Qualifications (Master degree, PhD...)	PhD
Job hours (full time/ part time)	Full time
Employer	UBFC – Université Bourgogne Franche-Comté
Host Laboratory	LMB
URL Host Laboratory	https://lmb.univ-fcomte.fr
Address Host Laboratory	16 Route de Gray, Besançon, 25000, France
Job description	<p>Nonlocal PDEs are becoming more and more common to describe long-distance interactions during collective cell movement in biology: e.g., cell-cell and cell-matrix biomechanical interactions, where traction forces can be sensed at a distance; or long-distance cell-cell communication via chemical messengers. While the importance of non-local spatial interactions is acknowledged in biology, the mathematical models that incorporate such interactions usually provide only qualitative description of the biological phenomena, as the models are too complex to be easily parametrised.</p> <p>The past decade has produced different spatial, temporal and spatio-temporal data on cell and tissue dynamics, which could be used to try to estimate some of the parameters and functions involved in such non-local PDEs.</p> <p>This project aims to address the following sub-questions:</p> <ul style="list-style-type: none"> (a) Develop methods to estimate parameters involved in cell-cell and cell-matrix interactions (including the kernel function) for a new non-local PDE describing collective cell movement in the context of skin pathologies (using synthetic data and/or real data). Perform parameter sensitivity and uncertainty analysis for this nonlocal PDE. (b) A posteriori error estimates and adaptive mesh refinement for non-local models describing collective cell movement, with a particular focus at the front of the moving cell collective.
Supervisor(s)	<p>In alphabetical order:</p> <p>Duprez, Michel (michel.duprez@inria.fr)</p> <p>Eftimie, Raluca (raluca.eftimie@univ-fcomte.fr)</p> <p>Lozinski, Alexei (alexei.lozinski@univ-fcomte.fr)</p>

	Trucu, Dumitru (D.Trucu@dundee.ac.uk)
Candidate profile	<p>We are looking for candidates with a strong research background in either one of the 2 research directions of this project: (a) parameter identification and uncertainty quantification for time-evolving PDEs, and/or (b) numerical analysis for non-local time-evolving PDEs.</p> <p>Applicants must have good writing skills and must be comfortable to communicate in English.</p>
Keywords	Parameter identification, numerical analysis, scientific computing, time-evolving PDEs , non-local PDEs
Application deadline	30 June 2024 (but applications will continue to be reviewed until the position is filled)
Starting Job	As soon as possible (and preferably before September 2024)
Application Depending on the type of position	<p>Please send the following documents (all in one PDF file) by e-mail to "raluca.eftimie@univ-fcomte.fr" :</p> <ol style="list-style-type: none"> 1) For EU candidates: Copy of your national ID card or of your passport page where your photo is printed. For non-EU candidates: Copy of your passport page where your photo is printed. 2) Curriculum Vitae (may include hyperlinks to your ResearchID, Research Gate Google Scholar accounts). 3) Detailed list of publications (may include hyperlinks to DOI of publications). 4) Letter of motivation relatively to the position (Cover Letter) in which applicants describe themselves and their contributions to previous research projects (maximum 2 pages) 5) Copy of your PhD degree if already available. 6) Coordinates of reference persons (maximum 3, at least your master thesis supervisor): Title, Name, organization, e-mail. <p>If you have questions regarding the application, please contact raluca.eftimie@univ-fcomte.fr.</p>