Call for PhD Candidate Vacancies

Disc4All

Training network to advance integrated computational simulations in translational medicine, applied to intervertebral disc degeneration

Funding: European Commission H2020-MSCA-ITN-ETN-2020 GA: 955735

Contact: disc4all@upf.edu

Web: https://www.upf.edu/web/disc4all

General Information:

The European community requires early stage researchers (ESRs) who can work across the boundaries of traditional disciplines, integrating experimental and in silico approaches to understand and manage highly prevalent multifactorial disorders, such as musculoskeletal disorders. The Disc4All training network utilises intervertebral disc degeneration (LDD) leading to low back pain (LBP) as a relevant application for the integration of data and computational simulations in translational medicine, to enable rational interpretations of the complexity of the interactions that eventually lead to symptoms.

LBP is the largest cause of morbidity worldwide, yet there remains controversy as to the specific cause leading to poor treatment options and prognosis. LDD is reported to account for 50% of LBP in young adults, but the interplay of factors from genetics, environmental, cellular responses and social and psychological factors is poorly understood. Unfortunately, the integration of such data into a holistic and rational map of degenerative processes and risk factors has not been achieved, requiring creation of professional crosscompetencies, which current training programmes in biomedicine, biomedical engineering and translational medicine fail to address, individually.

Disc4All aims to tackle this issue through collaborative expertise of clinicians; computational physicists and biologists; geneticists; computer scientists; cell and molecular biologists; microbiologists; bioinformaticians; and industrial partners. It provides interdisciplinary training in data curation and integration; experimental and theoretical/computational modelling; computer algorithm development; tool generation; and model and simulation platforms to transparently integrate primary data for enhanced clinical interpretations through models and simulations. Complementary training is offered in dissemination; project management; research integrity; ethics; regulation; policy; business strategy; and public and patient engagement. The Disc4All ESRs will provide a new generation of internationally mobile professionals with unique skill sets for the development of thriving careers in translational research applied to multifactorial disorders.

Hiring Institution

Hiring Disc4All Member: University of Liège

Web: https://www.uliege.be

Address: Université de Liège
Place du 20-Août, 7  
4000 Liège – Belgique

Type of contract: temporary (36 months)

Job status: full-time

Hours per week: 38 hours

Offer starting date: 01/01/2021

EU Research Framework: H2020 MSCA-ITN-ETN

Marie Curie Grant Agreement Number: 955735

Open Position

Topic: In vitro and in silico modelling of cartilage endplate degeneration mechanisms.

Description: the PhD candidate will be using the mesofluidics setup available at the host institute to test bovine IVD endplates under different fluid regimes defined through FE simulations with endplate micromodels by other partners in the consortium. Experiments consist of testing various biological conditions in the set-up and monitoring the tissue response through multiplex (elisa) and multi-omics (transcriptomics & metabolomics) assays. These experiments will serve to gain a system-level understanding of the interactions taking place in the IVD endplates and validate the computational models developed by other partners in the project.

Supervision: Prof. Liesbet Geris

Hosting lab: Biomechanics Research Unit, GIGA in silico medicine

Location:
GIGA institute  
B34- Quartier Hôpital  
Avenue de l'Hôpital, 11  
4000 Liège – Belgium


Benefits

The MSCA programme offers a competitive salary and attractive working conditions, in accordance with the MSCA regulations for early stage researchers.

You will be enrolled in the PhD programme of the Engineering School (with an additional training from the GIGA doctoral school) of the UNIVERSITY OF LiÈGE (Liège, Belgium), and have the opportunity to learn from a consortium of 19 institutions (11 Beneficiaries, 8 Partner organizations). In addition to the individual scientific projects, all ESRs will benefit from further continuing education, which includes secondment to UNIVERSITÄT BERN (Bern, Switzerland),
PROTATONCE LTD (Athens, Greece) and UNIVERSIDAD POMPEU FABRA (Barcelona, Spain), a variety of training courses for specific and transferable skills and active participation and international conferences.

Successful candidates will be offered a 36 months full-time employment contract, with an monthly salary of 3270€ (average gross salary, before statutory deductions, probably around 2000 euro net); plus an additional mobility allowance (600€ per month, unconditional), and an additional family allowance (500€ per month, if applicable).

**Eligibility criteria**

a) To apply for these MSCA Training positions, applicants must fulfil the following criteria:

- **Mobility**: to be eligible for a position, you should not have resided in the country of the host institution for more than 12 months over the three years before the starting date of the position, excluding holidays and (refugee status) asylum application.
- **Early Stage Researcher (ESR)**: At the time of recruitment by the host organisation, an ESR shall be in the first four years (full-time equivalent research experience) of his/her research career and not have been awarded a doctoral degree.

Candidates must prove that they fulfil the aforementioned criteria through relevant documentation (certificates, official statements, residency card, ...).

b) Specific requirements for the proposed project:

- **Educational Level**: Master in biomedical engineering, biomedical sciences, (bio)mechanics or equivalent.
- **Required languages**: English
- **Skills/Qualifications**: The candidate should ideally have both experimental (molecular biology / fluidics) and computational (in silico modelling) skills or at the very least a proven interest in both.
- **Eligibility to enrol in the PhD programme of the University of Liège Engineering School**: acquired 60 ECTS of bachelor and master training.

**Selection Criteria**

The selection committee uses a number of indicators to evaluate the applicant's preparedness, motivation and potential.

1st phase, remote pre-selection:

The Scientific, Technological & Academic excellence will be considered at first, based on:

- Quality of the CV, in general
- Any demonstrated research experience, particularly if supported by evidences such as scientific publications, patents, participation in scientific congresses, ...
• Undergraduate performance: overall, with a special focus on relevant field-specific courses
• Any demonstrated previous recognitions (grants, awards, ...)
• Reference letters provided by professors and senior scientists: Three reference letters are expected. At least two letters must be issued by scholars. The third letter can be provided either by a scholar or by a relevant professional of the industrial sector. Referees are asked to address analytical capabilities, technical proficiency, ability to work independently and motivation/commitment.
• Statement of purpose: past research experience, motivation for applying to this particular PhD project, academic fit, contribution of the project to the candidate’s future careers plans, ...
• Additional relevant skills (field-specific): demonstrated, e.g. through previous projects, and or through previous participation in scientific contests, trainings, ...

2nd phase, interview(s):

Should the candidate be preselected at phase 1, a second phase will consist in at least one interview through which the motivation, the proactive behaviour, the capacity to work collaboratively, the organizational skills, the communication skills and the capacity to engage in a scientific discussion and manage problems, will be assessed, among other aspects.

The final decision will be the result of a consensus of an evaluation committee that will take into account the results of both recruitment phases 1 and 2. The candidate will be informed of the section results by email.

Application Process:

All the documents that prove the eligibility of the candidate and should be provided. As for the selection process candidates are expected to provide at least the following documents:

• A brief introduction letter (no more than one A4 page) that summarizes the documents and the nature of the information provided for the selection
• A full CV
• The three requested reference letters
• The letter of purpose (no more than two A4 pages)

All documents must be sent by email to the Principal Investigator of the proposed project (Prof. Liesbet Geris - liesbet.geris@uliege.be), the local project manager (Dr. Bernard Staumont – b.staumont@uliege.be) and to the Management of the Disc4All project (disc4all@upf.edu) before 31/10/2020. The title of the application email should be “DISC4ALL PhD position U.Liège” in order to ensure correct processing.