

Call for PhD Candidate (Early Stage Researcher) Vacancy

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 (ESR) 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 the creation of professional cross competencies, 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 ESR will stand for 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

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Hiring Disc4All Member: Hospital del Mar Medical Research Institute (IMIM)

Web: <http://grib.imim.es/research/integrative-biomedical-informatics/>

Address: Barcelona Biomedical Research Park (PRBB), C/ Doctor Aiguader, 88, 08003, Barcelona

Type of contract: temporary (36 months)

Job status: full-time

Hours per week: 40

Incorporation date: April 2021 at the latest

EU Research Framework: H2020 MSCA-ITN-ETN

Marie Curie Grant Agreement Number: 955735

Open Positions

Topic: Data-driven gene prioritization in LDD & phenome-genome relationships

Description: The candidate will use network-based disease gene prioritization approaches to understand the pathophysiology of lumbar intervertebral disc degeneration (LDD). (S)he will also apply different computational strategies and tools to reveal comorbidities related to LDD and will integrate data from protein interaction databases to uncover latent connections between comorbid diseases. The candidate will work in the implementation of a model for biomarker recommendation based on genotype-phenotype relationships and related comorbidities.

Supervision: Janet Piñero González (IMIM-UPF) / Baldomero Oliva (IMIM-UPF)

Co-supervisors: Frances MK Williams (KCL), Leonidas Alexopoulos & Nikos Tsolakos (PAO)

Hosting lab: Integrative Biomedical Informatics, Research Programme on Biomedical Informatics (GRIB), Hospital del Mar Medical Research Institute (IMIM) and Universitat Pompeu Fabra.

Location: Hospital del Mar Medical Research Institute

web: <http://grib.imim.es/research/integrative-biomedical-informatics/>

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 BIOMEDICINE of the UNIVERSIDAD POMPEU FABRA – UPF (<https://www.upf.edu/web/doctorats/biomedicine>) and will have the opportunity to learn from a consortium of [19 institutions](https://www.upf.edu/web/disc4all/beneficiaries) (11 Beneficiaries, 8 Partner organizations - <https://www.upf.edu/web/disc4all/beneficiaries>). In addition to the individual scientific projects, all ESRs will benefit from further continuing education, which includes secondment to

King's College London, UK & ProtATonce Ltd, Greece, 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 a monthly average gross salary of 3119 €, plus a mobility allowance of 600€ per month (unconditional) and a family allowance of 500€ per month (if applicable).

All the amounts mentioned above are expressed before statutory deductions in charge of the Institution and the candidate: National Insurance and Income Tax.

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's degree in a relevant subject area such as statistics, biochemistry, biological sciences, genetics, or bioinformatics
- **Required languages:** English
- **Skills/Qualifications:** Demonstration of strong computational, bioinformatics analytical skills. Previous experience in working with network biology models will be a plus.
- **Eligibility to be enrolled in the PhD in Biomedicine programme of the Universitat Pompeu Fabra** (<https://www.upf.edu/web/doctorats/biomedicine>)

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
- Copy of Academic title
- The three requested reference letters
- The letter of purpose (no more than two A4 pages)

The Enrolment Form must be completed at

https://www.imim.es/ofertes-treball/view_contracte.php?id=1623

In addition, all the documents must be sent by email to JANET PIÑERO, janet.pinero@upf.edu and to the Management of the Disc4All project (disc4all@upf.edu) **before February 12th, 2021.**