Disc4All Training network to advance integrated computational simulations in translational medicine, applied to intervertebral disc degeneration

## REPORT: ESRs RECRUITMENT PUBLISHED

Deliverable: D7.1 (WP7)

H2020-MSCA-ITN-ETN-2020 GA:

955735

Budget: €3,996,776.52

Dates: 01/11/2020-31/10/2024

Project acronym: Disc4ALL

Coordinator: Universitat Pompeu

Fabra Barcelona

Dissemination level: Public

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 955735





## 1.0 Background

The Consortium initially established that all 15 early stage researchers (ESRs) shall be recruited during 3 Recruitment periods:

- 1st Recruitment Period (ESR 1, 2, 4, 5, 6, 7, 9, 12), August 2020-January 2021.
- 2<sup>nd</sup> Recruitment Period (ESR 8, 10, 11, 13, 14), February-April 2021.
- 3<sup>rd</sup> Recruitment Period (ESR 15, ESR 3), May-September 2021.

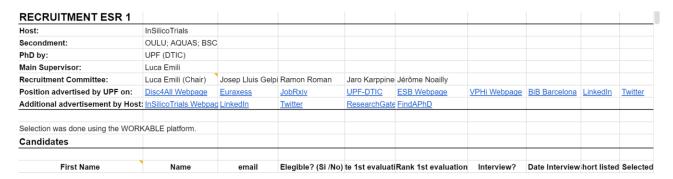
### 2.0 Advertisements

Recruitment advertisements were published and designed to give a broad description of the competences required, as well as the working conditions, entitlements, the type of Doctorate Degree awarded, and career development prospects. The application details were formulated independent of gender, nationality and marital status.

The Coordinator – Universitat Pompeu Fabra (UPF) and the Principal Investigator (PI) in each beneficiary institution published the vacancies. After the closing date, applications were screened by each beneficiary independently for eligibility with respect to MSCA rules on researcher mobility and experience. PI collected CVs and application documents, consulted external advice and a Recruitment Committee, and conducted online interviews.

The positions were advertised as a consortium on Euraxess (see Appendix A). They were also published on beneficiaries' websites, Disc4All website (Appendix B), through the individual supervisor's network, social media channels (LinkedIn & Twitter, Appendix C) and via subject-specific websites (Appendix D).

To facilitate the advertisement and recruitment process an excel template was designed and shared with all PIs and Recruitment committees. More information regarding the advertisement and recruitment shall be provided in the Progress Report.



## 3.0 Deviations

## ESR7

Due to pandemic conditions and country related restrictions, the ESR 7 wasn't able to continue with the PhD enrollment. Thence a new call for candidates was published in May 2021.





## APPENDIX A – EXCERPT OF ADVERTISEMENT OF ESR POSITIONS ON EURAXESS

- First Recruitment Period, link: https://euraxess.ec.europa.eu/jobs/554473
- 2<sup>nd</sup> Recruitment Period, link: <a href="https://euraxess.ec.europa.eu/jobs/603615">https://euraxess.ec.europa.eu/jobs/603615</a>,
  https://euraxess.ec.europa.eu/jobs/571495
- 3<sup>rd</sup> Recruitment Period, link: <a href="https://euraxess.ec.europa.eu/jobs/640980">https://euraxess.ec.europa.eu/jobs/640980</a>, https://euraxess.ec.europa.eu/jobs/637295



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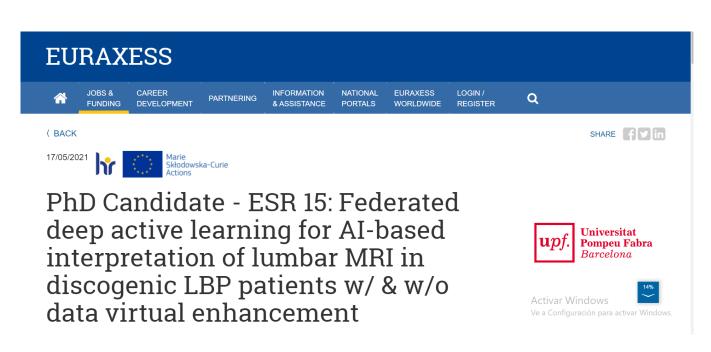






Early Stage Researcher/PhD Candidate Vacancie - ESR3 Enabling the exploration of Intervertebral Disc (IVD) disease mechanisms in LBP on M&S platforms









## APPENDIX B – EXCERPT OF ADVERTISEMENT OF ESR POSITIONS ON DISC4ALL WEBSITE

## **Disc4All Website:** https://www.upf.edu/web/disc4all/recruitment

<u>EARLY CAREER RESEARCHER POSITIONS:</u> Disc4All will have three recruitment periods. Check the offers by periode and leave your contact if you are interested to apply to forthcoming positions:

· Early expression of interest for the forthcoming calls for application to the Disc4All vacancies

#### OPEN CALLS

CLOSED: Application for ESR 3: Enabling the exploration of Intervertebral Disc (IVD) disease mechanisms in LBP on M&S platform

ESR 3 will adapt diverse sets of software components & models for transformation into tools, including multiscale AB-FE simulations, image analysis, classification, 3D modelling, text analysis, RN selection & metamodelling; Generate a data- and model-agnostic M&S platform for data and tools integration based on cloud services, including HPC computing capacity; Dockerise & concatenate tools to build complete IVD M&S simulation workflows able to virtually augment input primary data with secondary data; Define frontend for cloud simulations and use by non-experts.

Host: BSC-CNS, Spain - Secondments: ULG; UBern - PhD delivered by: UB (PhD programme in Mathematics and Informatics), Deadline for recruitment: June 2021

### SEE JOB OFFER & APPLY - Application Deadline: 31/05/2021EXTENDED: 30/06/2021

• CLOSED: Application for ESR 7: Experimental exploration of the microbiome in degenerated IVD

This doctoral research program will investigate the potential role of infective agents and the microbiome in low back pain. Utilising human intervertebral disc samples from surgery the IVD microbiome will be characterised together with associated microbiome sites using high throughput microbiome sequencing. In vitro co-culture systems will then be deployed to investigate the potential roles of infective agents and the microbiome on disc cell behaviour and implications in the pathogenesis of disc degeneration. Culture systems will be utilised which mimic the cellular niche of human intervertebral disc during disc degeneration.

HOST: SHU, United Kingdom - Secondments: UBern; ULG - PhD delivered by: SHU - Deadline for recruitment: June 2021

### SEE JOB OFFER & APPLY - Application Deadline: 20/06/2021

CLOSED: Application for ESR 15: Federated deep active learning for AI-based interpretation of lumbar MRI in discogenic LBP patients w/ & w/o data virtual enhancement.

Description: In this project, the successful candidate will develop the next generation of Deep Learning methods for automatic and interpretable analysis of lumbar spine MRI data. The PhD thesis will contribute to the Disc4All Project in terms of advanced low back pain patient stratification, and it aims to develop tools, allowing the learning from data with and without annotations, and from different sources (i.e. in a federated learning setup). As we will also develop new ways to interpret low back pain phenotypes our of medical images, both real world and (interpretable) simulation-based interpretable, and models will be trained through active learning. Hence, the doctoral student is expected to contribute to progresses in generic machine learning, computer vision and MRI-based interpretable diagnoses for low back pain.

HOST: University of Oulu, Finland - Secondments: Plexalis; KCL; UPF, GALGO - PhD delivered by: OULU - Deadline for recruitment: June 2021

### SEE JOB OFFER & APPLY - Application Deadline: 20/06/2021

• CLOSED: Application for ESR 13: Multiscale modelling of IVD cell activity & potential tissue turnover

ESR 13 will work on the multiscale modelling of the mechanisms of intervertebral disc regulation. Specifically, the PhD project will target the modelling and simulation of bottom-up processes of tissue regulation, through which the dynamics of cell activity contributes to disc tissue turnover in specific regions of interest, in response to multifactorial cell stimulations. Different types of intervertebral disc network models will be used and combined to successively incorporate cell culture experimental data, proteomics measurements and gene variant effects. Interplays of biochemical, mechanical and nutritional cell stimulation will be modelled in representative volume elements through agent-based modelling. Eventually, collective cell activity will be linked with heterogeneous cell environments predictable through disc tissue and organ finite element models.

HOST: UPF, Spain - Secondments: PAO; SHU; UBern - PhD delivered by: UPF - Deadline for recruitment: April 2021

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SEE JOB OFFER & APPLY - Application Deadline: 20/02/2021 EXTENDED: 20/03/2021





### 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) that leads to low back pain (LER) as a helevant ws application for the integration of data and computational simulations in translational para activar

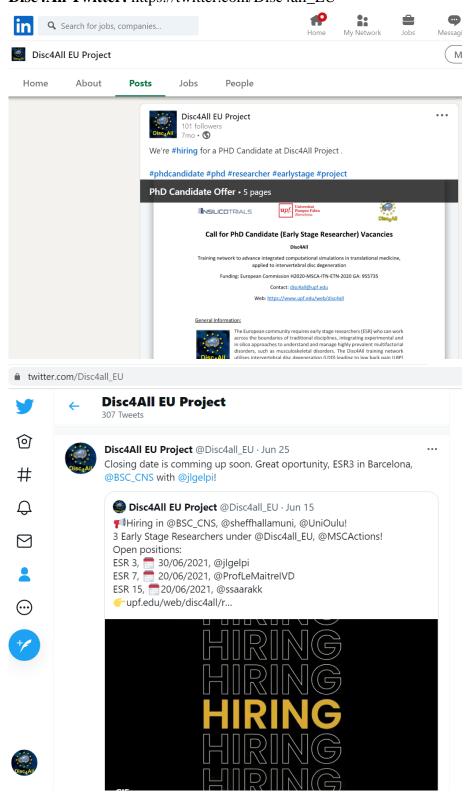
medicine, to enable rational interpretations of the complex interactions that can lead to symptoms.





# APPENDIX C – EXCERPT OF ADVERTISEMENT OF ESR POSITIONS ON SOCIAL MEDIA (LINKEDIN & TWITTER)

**Disc4All LinkedIn:** https://www.linkedin.com/company/disc4all-project/?viewAsMember=true **Disc4All Twitter:** https://twitter.com/Disc4all\_EU







## APPENDIX D – ADVERTISEMENT SITES SUMMARY

	EURAXESS	Beneficiary's website <sup>1</sup>	UPF-DTIC website <sup>2</sup>	Disc4All website <sup>3</sup>	JobRxiv <sup>4</sup>	LinkedIn 5	Twitter <sup>6</sup>	Other <sup>7</sup>
ESR1	✓	✓	✓	✓	<b>√</b>	✓	✓	✓
ESR2	✓	✓	✓	✓	<b>√</b>	✓	✓	✓
ESR3	✓	✓	✓	✓	<b>√</b>	✓	✓	✓
ESR4	<b>√</b>	✓	✓	✓	<b>√</b>	✓	✓	<b>√</b>
ESR5	<b>√</b>	✓	<b>√</b>	✓	<b>√</b>	✓	✓	✓
ESR6	✓	✓	✓	✓	<b>√</b>	<b>√</b>	✓	<b>√</b>
ESR7	<b>√</b>	✓	✓	✓	<b>√</b>	<b>√</b>	✓	<b>√</b>
ESR8	✓	✓	<b>√</b>	✓	<b>√</b>	<b>√</b>	✓	✓
ESR9	✓	✓	<b>√</b>	✓	<b>√</b>	<b>√</b>	✓	✓
ESR10	✓	✓	<b>√</b>	✓	<b>√</b>	<b>√</b>	✓	✓
ESR11	<b>√</b>	✓	<b>√</b>	✓	<b>√</b>	✓	✓	✓
ESR12	<b>√</b>	✓	<b>√</b>	✓	<b>√</b>	✓	✓	✓
ESR13	<b>√</b>	✓	<b>√</b>	✓	✓	<b>√</b>	<b>√</b>	<b>√</b>
ESR14	<b>√</b>	✓	<b>√</b>	✓	✓	<b>√</b>	<b>√</b>	<b>√</b>
ESR15	✓	✓	<b>√</b>	✓	✓	✓	✓	✓

<sup>&</sup>lt;sup>1</sup> Example for ESR7:

https://my.corehr.com/pls/shurecruit/erq\_jobspec\_version\_4.display\_form?p\_company=1&p\_internal\_external=E&p\_display\_in\_irish=N&p\_process\_type=&p\_applicant\_no=&p\_form\_profile\_detail=&p\_display\_apply\_ind=Y&p\_ref\_resh\_search=Y&p\_recruitment\_id=067784

Advertisements were posted on Twitter and LinkedIn pages of several Principal Investigators and biology groups as well as the LinkedIn and Twitter pages of the Disc4all project.

<sup>&</sup>lt;sup>2</sup> https://www.upf.edu/web/etic/phd

<sup>&</sup>lt;sup>3</sup> https://www.upf.edu/web/disc4all/recruitment

 $<sup>\</sup>frac{^4\text{https://jobrxiv.org/job/disc4all-h2020-msca-itn-etn-2020-ga-955735-27778-call-for-phd-candidates-h2020-itn-etn-project-disc4all-1st-recruitment-period/$ 

<sup>&</sup>lt;sup>5</sup> https://www.linkedin.com/posts/etic-upf-606167114 call-for-phd-candidate-vacancies-itn-etn-activity-6752871902739496960-UvHK/, https://www.linkedin.com/company/disc4all-project/?viewAsMember=true https://twitter.com/Disc4all\_EU\_, https://twitter.com/BCN\_MedTech

Other sites such as the ResearchGate, FindAPhD, ESB Webpage, BiB Barcelona, Jobs.ac.uk, VPHi Webpage, tom-lab web: https://esbiomech.org/blog/2020/08/31/extended-deadline-3d-modeling-of-the-lumbar-spine-automatic-extraction-of-3d-morphological-features-in-ldd-in-the-disc4all-training-network/, https://www.vph-institute.org/news/disc4all-opens-a-call-for-a-number-of-marie-sklodowska-curie-positions-on-translational-research-in-.html, https://www.jobs.ac.uk/job/CBR284/early-stage-researcher-experimental-exploration-of-the-microbiome-in-degenerated-ivd