PhD student position at the Regenerative Medicine Technologies Lab, Faculty of Biomedical Sciences at USI Università della Svizzera italiana

Università della Svizzera italiana (USI) is a young and lively university, a hub of opportunity open to the world where students are offered a quality interdisciplinary education in which they can be fully engaged and take center stage, and where our researchers can count on having the space to freely pursue their initiative.

Established in 1996, USI is in constant evolution, always taking on new challenges while remaining true to its three guiding principles: quality, openness and responsibility.

The Regenerative Medicine Technologies (RMT) Lab is part of the Laboratories for Translational Research of Ente Ospedaliero Cantonale located in Bellinzona (Switzerland).

Strategic research areas of the RMT Lab are: in vitro disease modeling through biofabrication (e.g. age-related diseases, cancer metastases, musculo-skeletal diseases); design of novel technologies for drug screening; personalized medicine applications using human tissue biopsies. To promote the advancement of these research areas, the RMT Lab combines microfluidics and microphysiological systems, 3D (bio)printing and computational simulations.

The RMT Lab invites applications for a fully funded Ph.D. position in Biomedical Sciences for conducting research on human muscle biofabrication.

The project
The lab has recently granted funding from the Swiss National Science Foundation (Sinergia grant) with a project focused on the design of a novel biofabrication strategy to develop functional, innervated human muscle tissues through a combination of microphysiological systems, volumetric bioprinting (i.e. xolography) and machine-learning techniques. The lab is equipped with all the necessary microfabrication and biofabrication tools that are required to complete the project including high resolution 3D printers, volumetric bioprinter and laser cutter. A dedicated high-content imaging system as well as shared analytical tools (e.g. microscopy facility, histology lab) to biologically validate the biofabricated tissues are available. The lab has access to cutting-edge facilities (e.g. bulk and single-cell RNaseq; mass spectrometry; confocal, multi-photon and electron microscopy) which are shared with the Institute for Research in Biomedicine and the Institute of Oncology Research within a dynamic, multidisciplinary and collaborative environment.

The Ph.D. Position
The doctoral student will be enrolled in the PhD track in Biomedical Sciences (PhD Biomedical Sciences). The doctoral student will work under the scientific supervision of Prof. Matteo Moretti. The successful candidate will be offered the possibility to work in a dynamic research team and in a multidisciplinary and international scientific environment. The PhD candidate will collaborate in the development of the institute research agenda. He or she will have the task of setting up a collection of data for his or her dissertation, while at
the same time participating in a variety of tasks related to the research streams in which he/she is involved.

The PhD candidate is also asked to present papers at scientific conferences and produce publications for scientific journals.

**Candidates’ profile**

Ideal candidates should satisfy the following requirements:

- A Master (or equivalent title) in any Life Sciences or related disciplines including Bioengineering. Priority given to Muscle Biology background.
- High personal interest in microphysiological systems, 3D (bio)printing.
- Experience with (or strong commitment to learn): cell culture (preferred if 3D cultures with hydrogels and skeletal muscle cells), imaging (confocal microscopy, preferably with 3D cultures and using high-content screening systems), standard biological techniques (qPCR, western blot, elisa, immunofluorescence), design and microfabrication of microphysiological systems, novel technologies including 3D (bio)-printing.
- Good skills in oral and written English (official language of the Ph.D. program).
- Self-motivation and exceptional commitment to experimental goals and deadlines.
- Strong organizational skills and ability to work independently as well as in a team.
- Critical data analysis and troubleshooting.
- Effectively communicate experimental data, maintain records and write manuscripts.
- Motivation to engage in the elaboration of a PhD dissertation.
- Interest for teaching and tutoring students and availability to collaborate with colleagues (engage in scientific dialogue, listen and think critically) are required.

**Contract terms**

Admission to the Ph.D. program is highly competitive. Admission decisions are based on the candidate’s background, interests, attitude and potential for academic achievement. Successful enrolment in the Ph.D. program and the position as doctoral researcher are not compatible with a further professional activity.

The successful candidates will work as research assistants at the RMT Lab and will have the possibility to interact with an international network of collaborators.

Workplace is RMT Lab, located in Bellinzona, Switzerland. Availability to travel to other parts of Switzerland and abroad (for purposes of collaboration and research) is required.

Starting date is October 1, 2023. However, the position will be kept open until a suitable candidate has been found.

**The Application**

Applications should contain: (1) a letter in which the applicants describe their research interests and the motivation to apply, (2) a complete CV, (3) copies of relevant diplomas, certificates as well as the full transcript of records that prove the candidates’ eligibility for doctoral studies in DISCIPLINE, (4) an electronic version of a research work (Master thesis or other scientific publication). The latter must be accompanied by a short summary in English (1 page maximum). (5) Two references (support letters are not necessary at this stage of evaluation).

Please send your application in electronic form or requests for further information to rmtlab@eoc.ch (please use the following subject: PhD-Muscle)
USI strives to be an equal opportunity and family friendly employer and is further responsive to the needs of dual career couples. We guarantee that the selection process will give equal opportunities to female and male researchers. As an institution that values diversity, USI particularly encourages applications from women and from all individuals from underrepresented groups.

Lugano, 13/06/2023