



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 in the project entitled **“The dark side of muscular dystrophies: targeting endothelial-mesenchymal transition in the dystrophic microenvironment through a biofabricated human muscle-on-a-chip”**.

The project

The lab has recently granted funding from the *Fondation Suisse de Recherche sur les Maladies Musculaires*. The 3 years project will deal with the identification of biological mechanisms driving blood vessel degeneration in skeletal muscle dystrophies.

The project involves the biofabrication of a human muscle-on-a-chip embedding contractile muscle bundles and perfusable microvascular networks. Starting from patient-derived cells, the project aims at dissecting the heterotypic cell-cell interactions occurring within the dystrophic muscle microenvironment through a combination of high-content imaging and next-gen sequencing techniques. The lab has access to cutting-edge facilities (e.g. bulk and single-cell RNAseq; spatial transcriptomics; 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. Simone Bersini (<https://search.usi.ch/en/people/af37e00b27d5199e68bb294f19e50006/bersini-simone>).

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 or Vascular Biology background
- High personal interest in organ-on-a-chip, 3D (bio)printing, microfabrication
- Experience with (or strong commitment to learn): cell culture (preferred if 3D cultures with hydrogels and muscle cells or endothelial 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
- 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 candidate will work as research assistant 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 June 1, 2025 (possibility to anticipate or postpone upon request). 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, (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 **simone.bersini@eoc.ch** (please use the following subject: **PhD-Muscle**)