



PhD position available in the Regenerative Medicine Technologies (RMT) Lab

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 “**A high-throughput microphysiological platform to analyze the role of the aging human vasculature in melanoma metastases**”.

The project

The lab has recently granted funding from the Swiss National Science Foundation.

The 4 years project will deal with the identification of biological mechanisms driving the formation and progression of metastases in presence of aging blood vessels with the final goal of identifying translational opportunities to block this process.

The project involves the biofabrication of 3D microvascular networks (main focus on the blood brain barrier), their integration with high-throughput culture systems and the analysis of blood vessel-cancer cell interaction through multiple next-gen sequencing techniques and high-content screening.

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 Vascular Biology or Cancer 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 endothelial cells or cancer 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.

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 **simone.bersini@eoc.ch** (please use the following subject: **PhD-Aging**)