

PhD position in “Brain microvascular rarefaction”

Our research group is seeking a highly motivated graduated student with interest in vascular biology and neuroscience to work on a newly EU-funded project CRUCIAL “Microvascular rarefaction in vascular cognitive impairment and heart failure”.

The development of cognitive impairment and heart failure is linked to the presence of comorbidities such as hypertension, diabetes, obesity and aging. Decreases in capillary vessel density within a tissue, called microvascular rarefaction, is a common feature of these comorbidities. The brain and the heart are especially sensitive to rarefaction because they have high oxygen demands. The overall aim of CRUCIAL is to identify novel non-invasive biomarkers for rarefaction and to identify targets to prevent rarefaction because we propose that targeting the microvasculature rather than the brain and heart themselves could prevent disease progression.

The main purpose of the proposed PhD project is to study the impact of combined vascular risk factors on brain microvasculature, cerebral blood flow and cognition with the aim to identify and validate key molecular players initiating microvascular rarefaction. The project involves a broad spectrum of methodologies including advanced 3D histology (tissue clearing and imaging with 2-photon and light sheet microscopies), cerebral blood flow measurement, animal behavioral testing, RNAseq of endothelial cells, standard molecular and biochemical assays, immunohistochemistry and confocal imaging.

Tasks and responsibilities

- Design and rigorous execution of experimental work, data analysis and dissemination of results;
- Co-supervise research interns;
- Contribute to teaching activities carried by the research group;
- Creative and independent thinker who can deepen a research question;
- Excellent communicator (oral and written) and team worker.

Requirements

- A MSc degree in a biomedical related field;
- Animal certification (Dutch art 9 or FELASA C) or willing to obtain;
- Excellent written and oral communication skills in English;
- Experience with common laboratory assays is required;
- Experience with animal behavior and/or tissue clearing/light sheet microscopy will be a major advantage.

We encourage you to apply when you feel prepared to take on challenging aims. This project is highly collaborative within an interdisciplinary team (local and EU CRUCIAL) and will suit an ambitious candidate who thrives in a fast-paced environment. Successful candidates will work under the supervision of Prof Robert van Oostenbrugge and Dr Sébastien Foulquier. The PhD candidate will be affiliated at the Department of Pharmacology-Toxicology at Maastricht University. The candidate is expected to collaborate with other PhD-students and postdoctoral fellows in the participating research groups.

What do we offer?

- An international PhD training program taught in English;
- Friendly and multi-disciplinary environment;
- State-of-the-art facilities and cutting-edge research project;
- Fixed-term contract of 1 + 3 years (evaluation after first year), full-time position. The salary will be set according to PhD salary scale of the Collective Labor Agreement of the Dutch Universities (CAO-NU).

Interested?

Deadline for submitting your application is February 1st 2020.

Please send your CV with names of two referees and a cover letter to: s.foulquier@maastrichtuniversity.nl

The position is to be filled ideally by March 1st 2020.