UPPSALA UNIVERSITET

PhD position in vascular biology

Uppsala University is a comprehensive research-intensive university with a strong international standing. Our mission is to pursue top-quality research and education and to interact constructively with society. Our most important assets are all the individuals whose curiosity and dedication make Uppsala University one of Sweden's most exciting workplaces. Uppsala University has 44.000 students, 7.100 employees and a turnover of SEK 7 billion.

The Department of Immunology, Genetics and Pathology at Uppsala University (www.igp.uu.se) has a broad research profile with strong research groups focused on cancer, autoimmune and genetic diseases. A fundamental idea at the department is to stimulate translational research and thereby closer interactions between medical research and health care. Research is presently conducted in the following areas: medical and clinical genetics, clinical immunology, pathology, neuro-oncology, vascular biology, radiation science and molecular tools. Department activities are also integrated with the units for Oncology, Clinical Genetics, Clinical Immunology, Clinical Pathology, and Hospital Physics at Akademiska sjukhuset, Uppsala. The department has teaching assignments in several education programmes, including Master Programmes, at the Faculty of Medicine, and in a number of educations at the Disciplinary Domain of Science and Technology. The department has a yearly turnover of around SEK 400 million, out of which more than half is made up of external funding. The staff amounts to approximately 340 employees, out of which 100 are PhD-students, and there are in total more than 600 affiliated people.

Vascular biology group:
The student will be placed in the Vascular biology research group headed by Lena Claesson-Welsh (http://www.igp.uu.se/forskning/vaskularbiologi/lena-claesson-welsh/) who will serve as the main supervisor. Mark Richards and Anna Dimberg will serve as co-supervisors. Our research group studies blood and lymphatic vessel biology in tissue culture, mouse and man. We ask how vessel formation and function are regulated in normal development and in pathological processes, such as cancer and retinopathy. We are particularly interested in leakage from blood and lymphatic vessels, how leakage is regulated and how it contributes to disease progression. This

knowledge will be applied to the development of new therapeutics.

Project description:
Blood vessels become established during development and expand during adult life; for example as a consequence of exercise, during the menstrual cycle and in wound healing. A number of diseases such as cancer, chronic inflammation and eye diseases are characterized by excessive blood vessel formation, leading to leaky and dysfunctional vessels. This in turn creates tissue edema and inflammation. To limit vessel leakage in pathological processes is therefore an important clinical need. The project is based on new methodology for the microscopic analysis of leaky vessels in tissues such as the skin and the eye. Substances are injected into the tissue to induce or modulate leakage, which is imaged 'live' by multiphoton microscopy. Leakage is quantified by image analysis and leakage mechanisms examined by the use of genetically modified mouse models and correlative confocal microscopy. Mechanistic findings will be correlated to the progression of cancer or eye disease (retinopathy or choroidal neovascularization). Recombinant mouse models will be generated through CRISPR/Cas9 technology.

Main techniques and analysis required in this project: Advanced microscopy, immunostaining/immunohistochemistry, image analysis, establishment and maintenance of mouse strains, quality controls, statistical analyses, oral and written presentation, manuscript preparation.

The student will receive a thorough education in endothelial cell biology, fluorescence microscopy and image analysis.

The successful candidate will devote most of the time towards his/her research level education. Other service activities within the department, e.g. education and administrative work can be included within the framework of the employment (maximum 20%). The position will be extended with the time devoted to teaching to allow four years of full time graduate studies.

Requirements of the applicant:
Applications are accepted from highly motivated candidates with a master degree in Biomedicine, (Molecular) Medicine, Molecular (Cell) Biology or similar. Written and oral proficiency in English is a prerequisite, as is basic knowledge of, and skills in cell biology. A successful candidate should be a highly motivated, organized, reliable

team player that can also work independently and is comfortable working with mice. Prior experience in immunocytochemistry, fluorescence microscopy and excel-based analysis is essential. Knowledge of bioinformatics, statistical analysis, programming and image-based analyses are a bonus.

The application should be written in English and include:

- a cover letter describing yourself, your research interests and your experience relevant to this position.
- a CV/resume; a verified list of course grades; and contact details for at least two reference persons.
- a 1-page synopsis of the limitations and possibilities of multiphoton and confocal microscopy.

If available, a Master thesis (completed or in draft form) and letters of recommendation can also be included.

Rules governing Ph.D. candidates are set out in the Higher Education Ordinance Chapter 5, §§ 1-7 and in Uppsala university's rules and guidelines http://regler.uu.se/?languageId=1

Uppsala University strives to be an inclusive workplace that promotes equal opportunities and attracts qualified candidates who can contribute to the University´s excellence and diversity. We welcome applications from all sections of the community and from people of all backgrounds.

Information about education at the postgraduate level, admission requirements and admission decisions can be found at http://www2.medfarm.uu.se/utbildning/forskarniva/vill_du_borja/

Selection of applicants will be done by the future tutor for the selected student in consultation with the postgraduate study group of the Department. The Postgraduate Program Committee at the Disciplinary Domain of Medicine will formally approve the student's admission.

The salary will be set according to local guidelines at Uppsala University.

For further information about the position please Contact Lena Claesson-Welsh, lena.welsh@igp.uu.se.

Salary: According to local agreements for PhD students at Uppsala University.
Starting date: According to the agreement.
Type of position: Full time position.
Welcome to submit your application by the latest 30 April 2019, UFV-PA 2019/799.

Placement: Department of Immunology, Genetics and Pathology
Type of employment: Full time , Temporary position longer than 6 months
Pay: Fast lön
Number of positions: 1
Working hours: 100 %
Town: Uppsala
County: Uppsala län
Country: Sweden
Union representative: Seko Universitetsklubben seko@uadm.uu.se
ST/TCO tco@fackorg.uu.se
Saco-rådet saco@uadm.uu.se
Number of reference: UFV-PA 2019/799
Last application date: 2019-04-30

Login and apply