

Doctoral student in Medical Science - Dosimetry for alpha-emitting radiopharmaceuticals

The University of Gothenburg tackles society's challenges with diverse knowledge. 56 000 students and 6 600 employees make the university a large and inspiring place to work and study. Strong research and attractive study programmes attract researchers and students from around the world. With new knowledge and new perspectives, the University contributes to a better future.

Doctoral position in Medical Science

Project title: Improved dosimetry for alpha-emitting radiopharmaceuticals

The Department of Medical Radiation Sciences is located at the Institute of Clinical Sciences at the Faculty of Medicine at Sahlgrenska Academy, University of Gothenburg.

General information about being a doctoral student at the University of Gothenburg can be found on the university's doctoral student pages <https://www.gu.se/en/doctoral-studies>

Duties

Doctoral education in Medical Science comprises carrying out a scientific project and completing at least 30 credits of courses at third-cycle level. The doctoral student must also write a scientific compilation thesis or monograph corresponding to at least 120 credits. For more information about third-cycle studies at Sahlgrenska Academy, see <https://www.gu.se/en/sahlgrenska-akademin/doctoral-studies>

Project: The PhD-student will be active in a research group working primarily with the use of alpha-particle emitting radionuclides for targeted radiotherapy of disseminated cancer with a focus on astatine-211. Currently the group has three PhD-students, one in medical physics and two in radiochemistry, and one postdoc in medical physics. The research is both pre-clinical and clinical, with a clinical focus on treating metastatic ovarian cancer with the alpha-emitter astatine-211. The group has conducted a phase-I clinical trial and is currently planning for a follow-up trial.

All radiation therapy requires accurate calculation of radiation absorbed dose to both tumor and healthy tissues. This is needed for a safe and effective treatment. A new type of radiation therapy, using molecularly targeted strategies to bring radionuclides to target cancer cells are now being introduced to treat spread cancers. Alpha-emitting radionuclides might be particularly well suited for this type of therapy. For proper evaluation of these promising therapies, radiation absorbed dose must be estimated for both tumor cells and critical healthy tissues. This is needed for optimizing the therapies, but also to fulfil various regulatory requirements. By developing new methods to improve the radiation dosimetry for alpha-emitting radiopharmaceuticals, we hope to better predict damage to cancer cells and healthy tissues. The aim is to establish validated pharmacokinetic models and absorbed dose calculations for each patient so that the radiation dose to tumor is sufficiently high, while critical healthy tissues are spared.

This PhD project involves precise and accurate measurements of alpha-emitters' radioactivity. Models for pharmacokinetics will be developed and validated with pre-clinical and clinical data. Pre-clinical in-vitro and in-vivo experiments with alpha-emitting radiopharmaceuticals will be part of the PhD-student's project. The PhD-student should be qualified for work with ionizing radiation, and be able to participate in pre-clinical in-vitro and in-vivo experiments. Documented experience in medical physics, particularly radiation dosimetry is desirable. Experience in the use of mathematical models for pharmacokinetics, internal radiation dosimetry, and microdosimetry is an asset.

Doctoral studies comprises four years of full-time study, and leads to a doctoral degree. As part of your employment as a doctoral student, you may have departmental duties corresponding to up to 20 % of full-time employment, distributed throughout your study period, and result in a corresponding extension of the studies. Departmental duties usually consist of teaching at first- and second-cycle levels, but may also include research and administration.

Eligibility

Doctoral education requires general eligibility and, where appropriate, specific eligibility as set out in the general syllabus for the subject.

The general eligibility requirements for doctoral studies are:

1. having completed a degree at second-cycle level, or
2. the fulfilment of course requirements totalling at least 240 credits, of which at least 60 credits must be at second-cycle level, or
3. the acquisition of equivalent knowledge in some other way, either in Sweden or abroad.

Specific entry requirements for this subject, according to the general syllabus, are:

having successfully completed the English B/6 course or is considered to have acquired equivalent knowledge through previous studies.

Assessment criteria

The selection of applicants who meet the basic and specific eligibility requirements will be based on the ability to assimilate the doctoral studies. The assessment shall attach particular importance to documented qualifications for:

- specific knowledge and skills within the subject area and related research fields
- experience of scientific theory and relevant research methodology
- scientific analysis and presentation verified through an academic paper, degree project, scientific journals or the like.

Employment

Once you have been admitted to doctoral studies, you will be employed as a doctoral student at the University of Gothenburg. The provisions for employment as a doctoral student can be found in ordinance SFS 1993:100. Initial employment as a doctoral student may apply for a maximum of one year, and may be renewed by a maximum of two years at a time. A doctoral student may be employed as a doctoral student for a maximum of eight years, but the total period of employment may not be longer than the equivalent of full-time education at doctoral level for four years.

Location: Sahlgrenska Academy, Institute of Clinical Sciences, Department of Medical Radiation Sciences. Extent: 100%. First day of employment: as agreed.

The University applies a local agreement on salaries for doctoral students.

Contact information

For more information about the project please contact principal supervisor, Stig Palm, Associate Professor, Institute of Clinical Sciences, phone: +46 703932303, e-mail: stig.palm@gu.se

Unions

Union representatives at the University of Gothenburg can be found here: <https://www.gu.se/om-universitetet/jobba-hos-oss/hjalp-for-sokande>

Application

You can apply to be admitted to doctoral education via the University of Gothenburg's recruitment portal. It is your responsibility to ensure that the application is complete as per this notice, and that the University receives it by the final application deadline.

You must include the following, in pdf format

- Personal letter
- CV
- Diploma and transcripts showing that you meet with the general entry requirement
- Proof of completion of English 6 course or the acquired equivalent knowledge through previous studies

If your degree is from a university outside of Sweden, make sure that you attach a diploma and full transcripts that makes assessing your degree easier.

If your degree has not been verified by a Swedish authority you need to provide contact details to the issuing university, registrar or similar, that can verify the degree at our request.

For information on what you need to submit in order to fulfill the English language requirement see <https://www.universityadmissions.se/en/entry-requirements/english-language-requirements/>

Applications must be received by: 2024-12-16

Information for International Applicants

Choosing a career in a foreign country is a big step. Thus, to give you a general idea of what we and Gothenburg have to offer in terms of benefits and life in general for you and your family/spouse/partner please visit:

<https://www.gu.se/en/about-the-university/welcome-services>
<https://www.movetogothenburg.com/>

The University works actively to achieve a working environment with equal conditions, and values the qualities that diversity brings to its operations. Salaries are set individually at the University. In accordance with the National Archives of Sweden's regulations, the University must archive application documents for two years after the appointment is filled. If you request that your documents are returned, they will be returned to you once the two years have passed. Otherwise, they will be destroyed. In connection to this recruitment, we have already decided which recruitment channels we should use. We therefore decline further contact with vendors, recruitment and staffing companies.