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PhD student in Environmental Chemistry

Department of Aquatic Sciences and Assessment

The Department of Aquatic Sciences and Assessment (www.slu.se/aquatic-sciences) is a competence centre for applied environmental science, with a national responsibility for assessing the condition of Swedish surface waters with respect to water chemistry, pollution and aquatic biota. The department has some 125 employees. The research focuses on geochemical and hydrological processes, aquatic ecology and biodiversity, as well as on aquatic ecotoxicology and environmental chemistry. The department is part of a Soil-Water-Environment cluster, a recently established competence center for landscape-level processes that also includes the Departments of 'Soil and Environment' and 'Energy and Technology'. The breadth of expertise among the 300 members in combination with a well-equipped infrastructure creates a unique platform for high quality research as well as environmental monitoring and assessment.

Stopping spread of antibiotic resistance genes, antibiotics and other emerging contaminants from on-site sewage facilities to the groundwater

Sanitation of domestic wastewater is essential for public and environmental health. For sub-urbanised and remote small communities, on-site sewage facilities (OSSFs) followed by infiltration are a common solution to treat and sanitise domestic wastewater. However, human excreted residues, such as drugs like antibiotics, and antibiotic resistant bacteria, are not fully removed by OSSFs, and can be released to the associated water bodies, particularly groundwater. This is an important issue of emerging concern worldwide, including in Sweden, since these residues could promote the growth of antibiotic resistance bacteria, and therefore potential enrichment of antibiotic resistance genes in the environment and contamination of drinking water source areas. To date, there are limited scientific investigations into the impact of OSSFs on groundwater contamination with antibiotic residues and antibiotic resistance genes.

Duties

We are seeking for a PhD student, who will (a) set up analytical methods to measure prioritised chemical substances in (waste)water matrices using liquid-chromatograph coupled with mass spectrometry (LC-MS), (b) perform environmental sampling and assessment to evaluate spatial and temporal profiles of both chemical and microbial contaminants in OSSF sewage and groundwater, and (c) identify sustainable solutions using different treatment techniques to limit discharges of the contaminants. The duties also include data analysis and processing, statistical evaluation, writing scientific manuscript in English, and data dissemination.

Qualifications

Applicants shall hold a MSc in analytical/environmental chemistry, environmental science, chemical engineering, or equivalent. Specialisation towards water analysis for chemicals and experience with liquid-chromatograph coupled with mass spectrometry (LC-MS) are valuable merits. Data processing skills using statistical computing and graphics, e.g. R, MATLAB, are of merits too. Previous experience with chemical analytical laboratory work and/or quantitative polymerase chain reaction (qPCR) for analysis of antibiotic resistance genes is desirable. High emphasis is also placed on personal characteristics such as interpersonal skills, analytical and problem-solving skills and the ability to work independently. Proficiency in English (both oral and written) is required.

Place of work

Uppsala

Form of employment

Employment as PhD student for 4 years

Starting date

April 1st, 2021 or according to agreement

Application

Welcome with your application no later than **February 21st, 2021**.

The application should include a i) CV, ii) a short description of experience indicating your suitability for the position, iii) copies of degree certificates from higher education, iv) contact information of at least two reference persons, and v) ideally a written reference letter from at least one referee. Applicants who have foreign citizenship must also submit a certified copy of the page in the passport that contains photos and personal information.

Selection among applicants meeting the requirements is made with reference to the written application, including CV, copies of degrees and transcripts of academic records, publication history, a list of at least two references familiar with the applicant's qualifications, certified knowledge of the English language and an interview.

Read about the PhD education at SLU here.

Academic union representatives

https://internt.slu.se/en/my-employment/employee-associations/kontaktpersoner-vid-rekrytering/

The Swedish University of Agricultural Sciences (SLU) develops the understanding and sustainable use and management of biological natural resources. The university ranks well internationally within its subject areas. SLU is a research-intensive university that also offers unique degree programmes in for example rural development and natural resource management, environmental economics, animal science and landscape architecture. SLU has just over 3,000 employees, 5,000 students and a turnover of SEK 3 billion. The university has invested heavily in a modern, attractive environment on its campuses in Alnarp, Umeå and Uppsala. www.slu.se SLU is an equal opportunity employer.

Kontaktperson:

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