

Doctoral student in Biology

Lund University, Faculty of Science, Department of Biology

Lund University was founded in 1666 and is repeatedly ranked among the world's top universities. The University has around 47 000 students and more than 8 800 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

Lund University welcomes applicants with diverse backgrounds and experiences. We regard gender equality and diversity as a strength and an asset.

Subject description

Biology is the broad subject about all living things. It encompasses everything from processes at the molecular and cellular level to global processes at ecosystem level. The subject is divided into a range of sub-disciplines and specialisations. The PhD programme at the Department of Biology includes many of these specialisations, from molecular biology to applied ecology, from viruses and individual cells to evolutionary biology and global biodiversity. Taking on research studies at the Department of Biology generally means focusing on a delimited part of the research area of biology and may include field studies, experiments, theoretical studies, or a combination of these.

Work duties

The main duties of doctoral students are to devote themselves to their research studies which includes participating in research projects and third cycle courses. The work duties can also include teaching and other departmental duties, up to 20%.

The goal of the PhD project is to provide the first thorough investigation of the chemical senses (olfaction and taste) in the larvae of the Eurasian spruce bark beetle (*Ips typographus*), with studies primarily targeting the molecular and physiological sensory mechanisms. The project includes identification of chemosensory genes and analysis of their expression in the larval life stage, followed by determination of olfactory receptor functions using *in vitro* heterologous expression systems. These studies will be complemented with electrophysiological recordings from the larval olfactory organ and experiments to investigate the larval behaviour in response to physiologically active odorants.

The project will involve state-of-art techniques, including gene annotation from the species' available genome sequence, functional characterization of receptors using HEK293 cells and *Xenopus laevis* oocytes, single-sensillum electrophysiological recordings, as well as behavioural assays in the laboratory. The student will also be able to learn state-of-the art methods in chemical analysis, e.g. gas chromatography-mass spectrometry (GC-MS). Hence, the project is suitable for candidates with a background and an interest in insect chemical and sensory ecology, with strong expertise also in molecular biology and genomic/transcriptomic methodologies.

Admission requirements

A person meets the general admission requirements for third-cycle courses and study programmes if he or she:

- has been awarded a second-cycle qualification, or
- has satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second cycle, or
- has acquired substantially equivalent knowledge in some other way in Sweden or abroad.

A person meets the specific admission requirements for third cycle studies in Biology if he or she has passed an independent project (for example a degree project) of at least 30 credits in a relevant subject and have good oral and written proficiency in English.

Additional requirements

- MSc degree in Biology/Molecular biology or a related area.
- Excellent oral and written proficiency in English.
- Demonstrated ability for proactive and independent work.
- Demonstrated ability to work as part of a group.
- Practical experience in molecular biology methods.
- High motivation and a sincere interest in this particular project.

In addition to the mandatory requirements, documented experience in the following areas will be considered as strong merits:

- Practical experience in behavioural work in the laboratory.
- Theoretical and practical experience in the scientific field of insect chemical ecology and sensory biology.
- Experience in cell culturing.
- Experience in electrophysiology.
- Experience in organic chemistry or biochemistry, and GC-MS analysis.
- Experience in transcriptomics and gene annotation.
- Experience in data processing and statistical analysis.
- Driver's license.

Assessment criteria

Selection for third-cycle studies is based on the student's potential to profit from such studies. The assessment of potential is made primarily on the basis of academic results from the first and second cycle. Special attention is paid to the following:

- Knowledge and skills relevant to the thesis project and the subject of study.
- An assessment of ability to work independently and to formulate and tackle research problems.
- Written and oral communication skills
- Other experience relevant to the third-cycle studies, for example professional experience.

Consideration will also be given to strong collaborative skills, drive and independence, and how the applicant, through his or her experience and skills, is deemed to have the abilities necessary for successfully completing the third cycle programme.

Terms of employment

Only those admitted to third cycle studies may be appointed to a doctoral studentship. Third cycle studies consist of full-time studies for 4 years. A doctoral studentship is a fixed-term employment of a maximum of 5 years (including 20% departmental duties). Doctoral studentships are regulated in the Higher Education Ordinance (1993:100), chapter 5, 1–7 §§.

Instructions on how to apply

Applications shall be written in English and include a cover letter stating the reasons why you are interested in the postgraduate education programme and in what way the research project corresponds to your interests and educational background. The application must also contain a CV, degree certificate or equivalent, and other documents you wish to be considered (grade transcripts, contact information for your references, letters of recommendation, etcetera).

The Faculty of Science conducts research and education within Biology, Astronomy, Physics, Geosciences, Chemistry, Mathematics and Environmental Science. The Faculty is organized into eight departments, gathered in the northern campus area. The Faculty has approximately 1500 students, 330 PhD students and 700 employees.

We kindly decline all sales and marketing contacts.

Type of employment	Temporary position
First day of employment	June 1st 2024 or by agreement
Salary	Monthly salary
Number of positions	1
Full-time equivalent	100

City Lund

County Skåne län

Country Sweden

Reference number PA2024/806

- Martin N Andersson, Senior lecturer,
martin_n.andersson@biol.lu.se,+46462229344

Contact

- Union representative**
- OFR/ST:Fackförbundet ST:s kansli, 046-2229362
 - SACO:Saco-s-rådet vid Lunds universitet, kansli@saco-s.lu.se
 - SEKO: Seko Civil, 046-2229366

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