PhD student in Plant Physiology

Ref. No. SU FV-1492-21


Research and education at Stockholm University at the Department of Ecology, Environment and Plant Sciences (DEEP) is located in the Arrhenius Laboratories, situated at the University Campus at Frescati. Research carried spans across a broad range of biology subject areas including Ecology and Evolution, Ecotoxicology, Marine Biology, Plant Physiology and Plant Systematics. Presently around 140 people are working at DEEP using state-of-the-art methodologies in an international research environment characterized by world-recognized researchers and a high level of professionalism.

Project description
The Department of Ecology, Environment and Plant Sciences invites applications for a four-year PhD position part of the project “Ecology, activity and intracellular communication in diatom-diazotrophic associations”. These planktonic N₂-fixing symbioses are ubiquitously distributed and important to both the Nitrogen and Carbon cycles, yet our understanding of how the partners communicate, acquire, share (or perhaps compete) elements necessary for their physiology and growth is still poorly characterized. The erosion of the symbiont genomes appears directed towards an N₂-fixing organelle, yet how the respective hosts have compensated for gene loss/function is currently un-investigated.

Thus, the overarching aims of the PhD project would be to investigate 1) our understanding of the intercellular communication and nutrient exchanges (e.g. Fe, N and C substrates), in the various symbioses 2) if hosts have altered/optimized/compensated their genomes by harboring N₂-fixing symbionts. A variety of single cell and bulk approaches will be applied, such as RNA-seq, Raman spectroscopy, confocal microscopy, microdissection, gene reconstruction approaches coupled to single cell methods so that activity, messages (transcripts), and identity of genes are linked to a particular partner cell. Field expeditions (15-30 day) for sample collections and/or extended stays for training in methods in collaborative labs will be required.

Qualification requirements
In order to meet the general entry requirements, the applicant must have completed a second-cycle degree, completed courses equivalent to at least 240 higher education credits, of which 60 credits must be in the second cycle, or have otherwise acquired equivalent knowledge in Sweden or elsewhere.

In order to meet the specific entry requirements, the general syllabus for doctoral studies in the field of Plant Physiology stipulates, that applicants must have completed at least 60 higher education credits in the second cycle, of which 15 credits must be from a course in Plant Physiology, and 30 credits from a project in Plant Physiology. Applicants may also have otherwise acquired equivalent knowledge in Sweden or elsewhere.

The qualification requirements must be met by the deadline for applications.

Selection
The criteria used in the selection for admittance to research training in Plant Physiology are knowledge of theory and applications in the research field, subject knowledge and experimental proficiency with relevance for the research project, ability to communicate orally and in writing, knowledge of English, creativity, analytic competence, initiative, independence and collaboration ability. Experience in basic molecular biology methods (nucleic acid extractions, PCR, cloning) and troubleshooting required. Previous experience with genetic reconstruction assays, cultivation of cyanobacteria and/or diatoms, confocal microscopy, high throughput sequencing, and sampling on field expeditions (ocean-going expeditions) are also a good qualification, but not necessary. Excellent skills in English (written and oral) is desirable.

Admission Regulations for Doctoral Studies at Stockholm University are available at: www.su.se/rules and regulations.

Terms of employment
Only a person who will be or has already been admitted to a third-cycle programme may be appointed to a doctoral
The term of the initial contract may not exceed one year. The employment may be extended for a maximum of two years at a time. However, the total period of employment may not exceed the equivalent of four years of full-time study.

Doctoral students should primarily devote themselves to their own education, but may engage in teaching, research, and administration corresponding to a maximum of 20% of a full-time position.

Please note that admission decisions cannot be appealed.

Stockholm University strives to be a workplace free from discrimination and with equal opportunities for all.

Contact
For more information, please contact project leader Rachel A Foster, telephone: +46 8 16 1207, rachel.foster@su.se. Further information about the position can be obtained from the Subject Representative Katharina Pawlowski, telephone: +46 8 16 3772, katharina.pawlowski@su.se.

Union representatives
Ingrid Lander (Saco-S), telephone: +46 708 16 26 64, saco@saco.su.se, Alejandra Pizarro Carrasco (Fackförbundet ST/Lärarförbundet), telephone: +46 8 16 34 89, alejandra@st.su.se, seko@seko.su.se (SEKO), and PhD student representative, doktorandombud@sus.su.se.

Application
Apply for the PhD student position at Stockholm University’s recruitment system. It is the responsibility of the applicant to ensure that the application is complete in accordance with the instructions in the job advertisement, and that it is submitted before the deadline.

We recommend that you hand in your application, including necessary documents, in English.

Please include the following information with your application

- Your contact details and personal data
- Your highest university degree
- Your language skills
- Contact details for 2–3 reference persons

and, in addition, please include the following documents

- Cover letter (2–3 pages), containing
  - Your expectations from, and intentions with the education
  - Why you are interested in the specific project—please describe which aspects of the scientific project described above.
  - What makes you suitable for the specific project—please provide specific details on how your background and experience is relevant for the scientific project described above.
- CV – degrees and other completed courses, work experience and a list of degree projects/theses
- Degree certificates and grades confirming that you meet the general and specific entry requirements (no more than 6 files)
- Degree projects/theses (no more than 6 files).

The instructions for applicants are available at: How to apply for a position.

You are welcome to apply!

Stockholm University contributes to the development of sustainable democratic society through knowledge, enlightenment and the pursuit of truth.

Closing date: 21/05/2021

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