



## Doctoral student in biology

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### *Lunds universitet, Naturvetenskapliga fakulteten, biologiska institutionen*

Lund University was founded in 1666 and is repeatedly ranked among the world's top 100 universities. The University has 40 000 students and 7 600 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

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

### **Project description**

One major challenge in evolutionary biology is to understand the genomic basis of ecological divergence and speciation. We can now map species divergence across the genome, but we lack knowledge on the importance of coding divergence vs. regulation of expression, and of interactions between genes, for speciation. How the relative importance of coding genetic variation and regulation of gene expression change along the speciation continuum is another interesting question. In this project we will take advantage of the peacock fly *Tephritis conura* that has changed niche through colonizing a new thistle species, and facultatively uses two different host plants in part of its range to address these questions. Combining cutting-edge sequencing and gene expression analysis techniques with experimental approaches the doctoral student will address the genetic basis ecological speciation. The student will also investigate whether the same genes are involved in facultative use of host plants and subsequent speciation.

### **Job description**

Working description: In this project the genetic underpinnings of adaptation to different host plants will be investigated in the peacock fly *T. conura*. The main task will consist in genetic analysis including e.g. genome annotation, analysis of sequence divergence based on whole genome re-sequencing data, analysis of transcriptome data and microbiome data. Field collection of peacock flies and experimental crossings and treatments are also integral parts of the project. There are possibilities to develop own ideas within the frame of the main research question in collaboration with the supervisor, Dr. Anna Runemark. The doctoral student will be part of the "The evolutionary ecology of plant-insect interactions" lab and partly involve collaborations with a post doc and students.

### **Qualifications**

To be eligible the applicant must hold a University degree e.g. a MSc or equivalent in a biological discipline e.g. evolutionary biology, ecology, genetics or a bioinformatics degree including biology courses. The exam should include some form of statistics course. The applicant must be proficient in spoken and written English. A genuine interest in speciation and the genetic underpinnings and an interest in science and a future academic career are meriting, and high grades in courses with evolutionary and molecular perspectives are appreciated.

Documented ability to independently have developed, modified and used r programming and/or bash scripts is strongly meriting, and an interest in developing these skills and mainly working with these tools is a requirement. Practical experience from planning and conducting experiments

and field work with insects and problem solving skills and ability to work independently are important qualities. Strong motivation and willingness to cooperate are also important qualities. The candidate is expected to have obtained a Swedish drivers license or equivalent which is valid in Sweden within 6 months of the employment.

### Eligibility

Students with basic eligibility for third-cycle studies are those who- have completed a second-cycle degree- have completed courses of at least 240 credits, of which at least 60 credits are from second-cycle courses, or- have acquired largely equivalent knowledge in some other way, in Sweden or abroad.

The employment of doctoral students is regulated in the Swedish Code of Statues 1998: 80. Only those who are or have been admitted to PhD-studies may be appointed to doctoral studentships. When an appointment to a doctoral studentship is made, the ability of the student to benefit from PhD-studies shall primarily be taken into account. In addition to devoting themselves to their studies, those appointed to doctoral studentships may be required to work with educational tasks, research and administration, in accordance with specific regulations in the ordinance.

### Type of employment

Limit of tenure, four years according to HF 5 kap 7§.

Lund University welcomes applicants with diverse backgrounds and experiences. We regard gender equality and diversity as a strength and an asset. We kindly decline all sales and marketing contacts.

<b>Type of employment</b>	Temporary position longer than 6 months
<b>Salary</b>	Monthly salary
<b>Number of positions</b>	1
<b>Working hours</b>	100
<b>City</b>	Lund
<b>County</b>	Skåne län
<b>Country</b>	Sweden
<b>Reference number</b>	PA2019/713
<b>Contact</b>	Anna Runemark, Forskare, +46 46 222 37 89 Elin Johansson, Personaladministratör, +46 46 222 79 21
<b>Union representative</b>	OFR/ST:Fackförbundet ST:s kansli, 046-222 93 62 SACO:Saco-s-rådet vid Lunds universitet, 046-222 93 64 SEKO: Seko Civil, 046-222 93 66
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