Postdoc scholarship in Computational Genomics and Bioinformatics

We are searching for a highly motivated postdoctoral researcher interested in applying and developing computational approaches to understand how genetic variation influences blood cell formation and blood cancer risk in humans.

The Nilsson lab at Lund University is currently undertaking a major effort aimed at identifying DNA sequence variants that influence blood cell formation and blood cancer risk at unprecedented scale and resolution called BloodVariome (European Research Council grant no. 770992). The effort involves high-resolution blood and immune cell phenotyping of about 20,000 individuals. It is unique in that it covers both mature cells and stem- and progenitor cells in both adults and newborns.

The successful candidate will be responsible for computational analysis of large-scale data sets generated in BloodVariome, including high-dimensional association data generated using flow-cytometry and digital imaging. For example, one challenge is to find novel ways to condense raw, multi-variate phenotype data into higher level (composite) phenotypes that capture effects of genetic variation on specific stages of blood cell development, including at the stem cell level. The postdoc will also acquire the knowledge together with non-computational lab members to characterize newly identified DNA sequence variants, answering questions such as: What are their molecular effects? What are their role in hematopoiesis? Can they be utilized clinically?

Lund University hosts one of the leading hematology and immunology research environments in Europe, involving some 250 researchers and students at the Biomedical Center (BMC).

The Nilsson lab combines advanced genomics and computational methods to understand blood disorders and blood cell formation. The lab comprises ~15 members with complementary expertise (clinical, computational and experimental). Our activities are markedly cross-disciplinary. We are funded by excellence grants from the European Research Council, Swedish Research Council, Knut and Alice Wallenberg’s Foundation, and the Swedish Foundation for Strategic Research. Our projects involve international collaborations, particularly deCODE Genetics (Reykjavik) and Broad Institute (Cambridge, MA).

Major discoveries from the lab include SMIM1 as the long-sought gene for the Vel blood group system (Storry et al., Nature Genetics 2013), ELL2 as a risk locus for multiple myeloma and regulator of immunoglobulin levels (Swaminathan et al., Nature Communications 2015), numerous additional multiple myeloma risk loci (Mitchell et al. and Went et al., Nature
Communications 2016 and 2018), and 32 loci influencing immunoglobulin levels (Jónsson et al., Nature Genetics 2017). Additional major stories are on the way out.

**Qualifications**

The successful candidate must have a Ph.D. degree within a relevant field (e.g., bioinformatics, human genomics, applied mathematics, or pattern recognition), ideally combined with practical experience in computational biology/genomics with applications to human biology. We particularly welcome applicants with experience of analyzing data related to the blood and immune systems as well as applicants with experience in population genomics (e.g., variant characterization, integrative genomics, variant interpretation). The successful candidate needs to show personal suitability, including excellent communicative and collaboration skills and an ability to work creatively and independently with different genomics data types at a high level.

To be eligible for a post doc scholarship at Lund University, the applicant must not have been employed by Lund University within the last two years in order to be eligible for a scholarship. The Ph.D. degree must not be more than three years old at the last day of applying.

While this scholarship is computationally focused, we are also advertising an experimentally focused scholarship separately.

**Placement:** Department of Hematology and Transfusion medicine  
**Ref No:** V 2019/1259  
**Duration:** 24 months  
**Starting time:** 2019-10-01 or per agreement  
**Last day for applying:** 2019-09-30

For further information regarding the position, please contact Björn Nilsson at bjorn.nilsson@med.lu.se.

**Application**

The written application should state the reference number **V 2019/1259** and include a CV, a personal letter stating the reasons why the study suits the applicant, list of publications, proof of dissertation, and other relevant documents and contact information to three references. The application should be addressed to bjorn.nilsson@med.lu.se.

**Other**

Lund University encourages both men and women to apply for the position.

**General information about postdoc scholarships at Lund University**

- The scholarship amounts to 24 000 SEK/month and is normally paid three months in advance.
- According to Swedish legislature, a scholarship is intended for the recipient’s own education and does not constitute compensation for work carried out for the University.
- The scholarship is a grant and therefore not subject to tax deduction.
- The scholarship does not entitle the recipient to compensation in case of illness.
- The scholarship does not constitute a pensionable income.
- The scholarship does not entitle the recipient to vacation. Leave can be approved in agreement with the supervisor.
• The scholarship does not include financial compensation for parental leave.
• The scholarship does not entitle the recipient to allowance during travels in the line of duty.
• The scholarship awarded is to be reviewed by the head of department every six months and the supervisor is to inform the head of department about the progress by updating the study plan.
• Scholarships set up by Lund University for any individual may not run for a period of more than 24 months.
• The scholarship follows the regulations established by the Vice-Chancellor of Lund University (June 27th 2013; Reg. No PE 2013/356).

More information about insurance for scholarship holders: https://www.staff.lu.se/employment/for-international-staff/insurance-for-international-staff/insurance-for-scholarship-holders