Single cell analysis of spermatogenesis in primates: Drivers of reduced male fertility and speciation

Applications are invited for a PhD fellowship/scholarship at Graduate School of Natural Sciences, Aarhus University, Denmark, within the Computer Science programme. The position is available from August 2022 or later.

Title:
Single cell analysis of spermatogenesis in primates: Drivers of reduced male fertility and speciation

Research area and project description:
Background
Human male fertility has been rapidly decreasing over the past century and today, one out of three couples struggle to become parents. While environmental and sociodemographic factors play important roles for this recent decrease, the basic function of spermatogenesis in men is very poor compared to many animals. We hypothesise that an ongoing evolutionary battle between the male sex chromosomes, X and Y, have adversely affected spermatogenesis, and we wish to elucidate the genetic determinants of this battle. We will apply a comparative evolutionary approach using testis samples from humans and other apes to understand how the X and Y affects proper spermatogenesis and what implications this has for male fertility in humans as well as the endangered apes where reproduction is crucial for species conservation.

Project
The project is funded by the Novo Nordisk foundation as an interdisciplinary synergy grant between the Department of Growth and Reproduction at Copenhagen University Hospital (Kristian Almstrup), Copenhagen Zoo (Christina Hvilsom) and Bioinformatics Research Centre (Mikkel Heide Schierup).

The candidate will work on developing new evolutionary approaches to single cell transcriptomics analysis from testes and sperm samples and apply these to large scale data sets already collected plus direct the acquisition of further data. The relative weight of methods development and data analysis will depend on the interests of the candidate.

Candidates interested in further information should please contact Mikkel Heide Schierup (mheide@birc.au.dk, or +4527782889)

For technical reasons, you must upload a project description. When - as here - you apply for a specific project, please simply copy the project description above, and upload it as a PDF in the application. If you wish to, you can indicate an URL where further information can be found. Please note that we reserve the right to remove scientific papers, large reports, theses and the like.

Qualifications and specific competences:
Applicants must have at least one year of a Master's degree in molecular biology, mathematics, statistics, bioinformatics or similar and have an interest in addressing biological problems with large scale data analyses. An interest in evolutionary biology and/or population genetics will be an

advantage. The PhD study can be three years (with an MSc) or four years (with one year of an MSc completed at the time of enrollment)

Place of employment and place of work:
The place of employment is Aarhus University, and the place of work is Bioinformatics Research Centre, Universitetsbyen 81, DK 8000 Aarhus C, Denmark.

Contacts:
Applicants seeking further information for this project are invited to contact:
Professor Mikkel Heide Schierup, e-mail: mheide@birc.au.dk

How to apply:
For information about application requirements and mandatory attachments, please see the Application guide. Please read the Application guide thoroughly before applying and note the GSNS language skills requirement.

When ready to apply, go to https://phd.nat.au.dk/for-applicants/apply-here/ (*Note, the online application system opens 1 March 2022)*

1. Choose May 2022 Call with deadline 1 May 2022 at 23:59 CEST.
2. You will be directed to the call and must choose the programme "Computer Science".
3. When filling in information about the project, please choose: "Single cell analysis of spermatogenesis in primates: Drivers of reduced male fertility and speciation (ScaspD)" in the dropdown menu in the box named "Study".

Please note:

- The programme committee may request further information or invite the applicant to attend an interview.

Aarhus University's ambition is to be an attractive and inspiring workplace for all and to foster a culture in which each individual has opportunities to thrive, achieve and develop. We view equality and diversity as assets, and we welcome all applicants. All interested candidates are encouraged to apply, regardless of their personal background.

Contact

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