Climate change and long-term shifts in phenology and community dynamics of Arctic plants and arthropods

Applications are invited for a PhD fellowship/scholarship at Graduate School of Technical Sciences, Aarhus University, Denmark, within the Bioscience programme. The position is available from 1 May 2021 or later.

Title:
Climate change and long-term shifts in phenology and community dynamics of Arctic plants and arthropods

Research area and project description:
This PhD project is part of the international project “ASsessing and mitigating the effects of climate change and biological Invasions on the spatial redistribution of biodiversity in Cold environments (ASICS)” funded by the BiodivERsA COFUND Call on "Biodiversity and Climate Change". The candidate will be embedded in a dynamic, international research environment. More info on the project at https://www.coldregioninvasives.com/.

Species seasonal timing of growth and reproduction (phenology) responds strongly to climate change. Phenological shifts are particularly strong in the Arctic. However, it is not clear how thermal tolerance and variation in phenological responses to climate (i.e. thermal biology and climatic sensitivity) among species may affect community dynamics. The candidate will analyse and interpret variation in climatic sensitivity of populations of Arctic plants and arthropods derived from long-term monitoring data from three sites in Greenland. Up to 25 years of standardized data and samples are available from these sites and will be used to identify the species groups, habitats, and sites with the largest climatic sensitivity. For selected taxa, the project will further test if temporal dynamics in community composition are driven by ecophysiological capacity, climatic sensitivity or other traits. Data on phenology of plants are available from weekly counts of flowers and arthropods throughout the growing season. The candidate will be involved with the ongoing long-term monitoring and do both experimental laboratory work and fieldwork in Greenland.

Qualifications and specific competences:
Applicants to the PhD position should have a Master’s degree in biology with strong expertise in population and community ecology and excellent quantitative skills. Programming experience in R is required and experience with entomological fieldwork is an advantage. The
applicant must have excellent writing skills, be independent, and should be enthusiastic about working in an interdisciplinary academic environment. The candidate is expected to do fieldwork under demanding environmental conditions in Greenland.

**Place of employment and place of work:**
The place of employment is Aarhus University, and the place of work is Department of Bioscience, Kalo, Grenåvej 14, DK-8410 Rønde, Denmark. Professor David Renault, University Rennes 1, France, [https://sites.google.com/view/david-renault/](https://sites.google.com/view/david-renault/) will co-supervise the project and exchange visits to his group and other partners of the ASICS project are funded.

**Contacts:**
Applicants seeking further information are invited to contact:

- Senior scientist Toke Thomas Høye, tth@bios.au.dk, +45 87158892, [https://sites.google.com/site/hoyelab/](https://sites.google.com/site/hoyelab/) (Main Supervisor)
- Professor Martin Holmstrup martin.holmstrup@bios.au.dk
- Senior scientist Paul Henning Krogh phk@bios.au.dk

**Application procedures**

**Before you apply**

**Information and attachments:**
Please be aware that you must have all relevant appendices, attachments, addresses for referees, etc. ready when you apply, as the entire application must be uploaded to the system in one go.

**Documentation of language skills:**
The English language requirement at the graduate school is comparable to an “English B level” in the Danish upper secondary school (“gymnasium”).

English language qualifications comparable to an “English B level” are documented by one of the following tests:

- **TOEFL test** (internet-based), minimum score: 83. The graduate school does not accept the paper-based test, nor the TOEFL ITP test. Remember to ask the test center to send your test results to Aarhus University in order to enable verification of your test results. **Aarhus University’s TOEFL code is 8935.**
  
  *Currently, the TOEFL iBT Special Home Edition test (available in selected areas) will also be accepted.*

- **IELTS (academic) test**, minimum average score: 6.5 points

- **Cambridge English Language Assessment:**
  Cambridge Certificate of Proficiency (CPE)
  Cambridge English: Certificate of Advanced English with grade A,B or C (CAE)
  Cambridge English: First Certificate with grade A (FCE)
When to take the test and how to upload the documentation:
The test result must not be more than two years old at the time of application.

The English language test should be taken before applying for admission and uploaded under “language skills documentation” in the online application form.

It is possible to apply for admission before you have taken the test. In this case documentation stating that you have signed up for a test (please state expected submission date) must be uploaded. If the test result is not part of the original application the test result is to be sent to gsns@psys.au.dk no later than one month after the application deadline.

The following applicants are exempted from documenting their English qualifications/taking a test:

- Applicants with citizenship from the following countries: Australia, Canada, Ireland, New Zealand, the United Kingdom, the United States, or one of the Nordic countries (Denmark, Finland, Iceland, Norway or Sweden).
- Applicants with a Bachelor’s or Master’s programme completed in Australia, Canada, Ireland, New Zealand, the United Kingdom, or the United States. In this case, please upload your Bachelor’s or Master’s diploma under the section ”Language skills documentation”.
- Applicants with a Bachelor’s or Master’s programme completed at a Danish university for which the requirement was English B level at the time of admission. In this case, please upload your Bachelor’s or Master’s diploma under the section ”Language skills documentation”.

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

How to apply:

1) Find the application form:
Go to https://phd.tech.au.dk/for-applicants/apply-here/ - Note, the online application system opens on 1 December 2020.
Choose February 2021 Call with deadline 1 February 2021 at noon (11.59 AM CEST). You will be directed to the call, and must choose the programme “Bioscience”.

2) Fill in the following information:

- Personal information
- Academic background
- Admission
- Financing (if any)
- Study: In the dropdown menu you must choose the project: “Climate change and long-term shifts in phenology and community dynamics of Arctic plants and arthropods”
- Source (how you found out about the call)

Next to some of the information fields you will find a number. Click on the number to get further directions on how to fill in the information field/what information is needed.
3) **Application attachments:**

Please be aware that you cannot submit the application if one or several of these documents have not been uploaded.

If you wish to upload more than one document under each section, you must scan/merge all documents into one large PDF file and upload this. Please note that we reserve the right to remove scientific papers, large reports, theses and the like. Instead you can indicate a URL where the information is available.

All information in the application must be in English or Danish, preferably English. A certified English translation is required for documents written in languages other than English or one of the Scandinavian languages (i.e. Norwegian, Swedish or Danish) languages.

As a minimum all applications must include (pdf-files only, max. 20 MB, no zip):

- One reference ([template for references](#))
- Curriculum vitae,
- Motivation (max. 1 page)
- Transcripts, grade point averages (weighted and unweighted), and diploma(s) for both Bachelor’s and Master’s degree. If the original documents are not in English or one of the Scandinavian languages (i.e. Norwegian, Swedish or Danish) then copies of the original documents as well as a certified English translation must be attached.
- Project description (½-4 pages). This document should describe your ideas and research plans for this specific project. More information about some of the data available to this project is available here: g-e-m.dk. Please note that we reserve the right to remove scientific papers, large reports, theses and the like.
- Documentation of language skills if required.

After submission of the application, you will receive a confirmation e-mail with an application ID, you should use for reference if needed.

**The graduate school reserves the right to verify the authenticity of your educational diploma and transcripts:**

- Request additional information to verify an application.
- Reject the application if it is proven, or if the University has reasonable belief, that the information provided is false or if the applicant refuses to provide the requested information, whether or not an offer has already been made.
- For further information on applying, assessment procedures, etc. please see the GSTS Application Guide.

Please note:

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

All interested candidates are encouraged to apply, regardless of their personal background.