Disentangling multiple drivers of shrub growth and recruitment across Greenland

Applications are invited for a PhD fellowship/scholarship at the Graduate School of Science and Technology, Aarhus University, Denmark, within the Bioscience programme. The position is available from 1 February 2019 or later.

Title:
Disentangling multiple drivers of shrub growth and recruitment across Greenland

Research area and project description:
Quantifying the impact of climate change on Arctic vegetation requires a representative sample of species responses across climatic gradients. The project aims to provide an improved understanding of intra- and inter-specific variation in growth and recruitment of shrubs in the Arctic. Most studies of climate change impacts on Arctic vegetation have focused on changes in shrub cover and abundance, while considerably less effort has been invested in understanding the factors controlling variation in growth and recruitment, and no study provides an integrated analysis of local variation in growth and recruitment across large scales. With a community-based dendroecological approach, signals of growth and recruitment pulses across time, space, and multiple species can be obtained and provide insight on the modifying role of plant-plant interactions and local environmental factors. Furthermore, investigations of spatio-temporal interactions between growth and functional traits (e.g. xylem anatomical traits) indicate that shrub species can optimize growth by adapting their hydraulic capacity to annual fluctuations in climatic conditions. In this PhD project, the candidate can utilize a unique data set of >1000 individuals of 13 shrub species collected at 20 plots across Greenland. Furthermore, the candidate will collect data at Disko Island, Greenland, in 2019 and contribute to the landscape scale mapping of shrub dynamics via ground sampling combined with ultra-high-resolution drone-based remote sensing. The project combines dendro-ecology, wood anatomy, community ecology, and remote sensing to gain a better understanding of shrub dynamics in Arctic ecosystems.
The candidate will be part of the Vegetation Dynamics Group and will be embedded in a team of other PhD students and postdocs working on shrub dynamics in Greenland. The candidate will be affiliated with the Center for Biodiversity Dynamics in a Changing World, the Arctic Research Center, and the Interdisciplinary Center for Climate Change Research at Aarhus University. Hence, the candidate will be working in a world-leading and dynamic research environment with ample opportunities to interact with other researchers nationally, as well as internationally, on related topics.

Qualifications and specific competences:
Applicants to the PhD position should ideally have a Master's degree in biology with strong expertise in community ecology and preferably dendroecology. A strong statistical background and programming experience in R is an advantage. The applicant should hold an internal fascination for the topic, be independent, have excellent writing skills, and should be enthusiastic about working in an interdisciplinary academic environment. Experience with fieldwork in Arctic-Alpine areas is an advantage, but not a prerequisite.

Place of Employment and Place of Work:
The PhD student will be enrolled in the Graduate School of Science and Technology (GSST) at Aarhus University. The place of employment will be at Aarhus University, Section for Ecoinformatics and Biodiversity (ECOINF) and Center for Biodiversity Dynamics in a Changing World (BIOCHANGE).
The candidate's main supervisor will be Associate Professor Signe Normand. Angela Prendin (Padova University, Italy), Isla Myers-Smith (University of Edinburgh, UK), and Bo Elberling (Center for Permafrost, Copenhagen University) will co-supervise on the relevant subprojects.

Contacts:
Applicants are encouraged to seek further information by contacting Signe Normand, signe.normand@bios.au.dk, +45 23718009. Further information can be found at www.signenormand.net, and twitter: @SigneNormand, @VegDyn, @UAS4Ecology, @EcoinfAU, @BiochangeAU and @ARC_AU.

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 GSST 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**, minimum score: 560 (paper-based test) or 83 (internet-based test). The paper-based test must have a "total score". From the August 2019 call, GSST will no longer accept the paper-based test.
Aarhus University does not accept the TOEFL ITP test. **Aarhus University's TOEFL code is 8935**. Ask the test centre to send your test results to Aarhus University, in order to enable verification of your test results.
- **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 sphd@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 Aarhus 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".
- Applicants able to document that English was the language of instruction during the whole period of their Bachelor's and/or Master's programme. This must be documented by uploading an official document from the institution stating this under "language skills documentation". The onus is on the applicant to provide this information, as GSST will not pursue information regarding language of instruction for any programmes or institutions.
 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 http://talent.au.dk/phd/scienceandtechnology/opencalls/
Choose November 2018 Call with deadline 1 November 2018 at 11.59 PM MET.
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) Disentangling multiple drivers of shrub growth and recruitment across Greenland
- Study: In the dropdown menu you must choose the project: "Disentangling multiple drivers of shrub growth and recruitment across Greenland"
- 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.
Please note that all information in the application must be in Danish or English.
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 and diploma(s)
- Project description (½-4 pages). For technical reasons, you must upload a project description. When - as here - you apply for a specific project, please as a minimum simply copy the project description above, and upload it as a PDF in the application. If you wish, you can expand the description with your own more specific ideas related to the project or 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.
- 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 e-mail will also include a link to the application – GSST urges you to check that all mandatory data, marked with an asterisk (*), is registered correctly and all attached files are readable. If there are any significant errors, you should reply to the confirmation e-mail with the correct details before the application deadline.

GSST 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 GSST application guide here.
  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.

Contact

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COMMENTS ON CONTENT:
PHD ADMINISTRATION

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