

PhD Candidate in Theoretical Ecology

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Company: University of Amsterdam (UvA)

Location: Amsterdam

Category: other-general

We are looking for an enthusiastic and highly motivated PhD-candidate who is eager to study the ecological consequences of sexual size dimorphism using mathematical models. You will be embedded in the , which is part of the Institute for Biodiversity and Ecosystem Dynamics () at the Faculty of Science at the University of Amsterdam.

In the animal kingdom, we commonly see species where one sex is larger than the other - a phenomenon called sexual size dimorphism. Despite remarkable differences between the sexes, these are not present early in life for most species. Because many differences between the sexes arise during an individual's development, the ecological conditions experienced early in life influence the expression of sexual dimorphism later in life. To understand the ecological consequences of sexual size dimorphism, we need to know how early-life growth and development shape differences between the sexes.

What are you going to do?

In this project, you will develop sex- and size-structured population models to study how plasticity in growth in body size during development affects the ecological consequences of sexual size dimorphism. You will use numerical continuation techniques and mathematical bifurcation analyses to analyse these models. While this is mainly a theoretical and computational research project, it is possible and highly encouraged to also carry out some experimental lab work at the University of Karlstad (Sweden) to test model predictions with an empirical fruit fly system.

As long as it fits in the general topic of this research position, you will have flexibility in choosing the questions you wish to investigate.

Possible questions that you may address for this project are:

How do changes in early life growth rate and the size at first reproduction affect population dynamics and species persistence in sexual size dimorphic species?

How does food availability and size-specific mortality shape sexual size dimorphism, and, vice versa, how do differences in size between the sexes affect the feedback on food availability and population dynamics?

What is the effect of resource segregation between the sexes or between life-stages on the ecological dynamics of sexual dimorphic populations?

How is sexual size dimorphism shaped by evolution, resource availability, and developmental plasticity?

Tasks and responsibilities:

Complete and defend a PhD thesis within the official appointment duration of four year;

Develop and analyse size- and sex-structured population models;

Contribute to the design and (possibly) execution of experiments to test model predictions;

Discuss your work in our group meetings, incorporate feedback, and give input to others;

Assist in teaching activities and in supervising bachelor and master students.

What do you have to offer?

You have strong analytical and critical thinking abilities, you are enthusiastic and self-motivated when it comes to learning new skills or exploring new topics, and you have good communication skills.

Your experience and profile

Completed or soon-to-be completed MSc in the biological sciences or different fields in the natural sciences (e.g., computational, mathematical, earth sciences) with an interest in ecology;

Experience with mathematical modelling, and an ability to learn new concepts and (computational) methods as needed;

Affinity with scientific computer programming (e.g., R, Matlab, Python);

Proficient communication skills in spoken and written English.

Writing experience and experience with bifurcation analysis is considered a plus.

Our offer

A PhD position with a temporary contract for 38 hours per week for the duration of 4 years (the initial contract will be for a period of 18 months and after satisfactory evaluation it will be extended for a total duration of 4 years). This should lead to a dissertation (PhD thesis). We will draft an educational plan that includes attendance of courses and (international) meetings. We also expect you to assist in teaching undergraduates and master students. The preferred starting date is as soon as possible.

The gross monthly salary, based on 38 hours per week and dependent on relevant experience, ranges between € 2.770,- and € 3.539,-. This does not include 8% holiday allowance and 8,3% year-end allowance. The UFO profile PhD Candidate is applicable. A favourable tax agreement, the '30% ruling', may apply to non-Dutch applicants. The is applicable.

Besides the salary and a vibrant and challenging environment at Science Park we offer you multiple fringe benefits:

232 holiday hours per year (based on fulltime) and extra holidays between Christmas and 1 January;

multiple courses to follow from our Teaching and Learning Centre;

a complete educational program for PhD students;

multiple courses on topics such as time management, handling stress and an online learning platform with 100+ different courses;

Pre-maternity and maternity leave (16 weeks in total), with 100% salary;

7 weeks birth leave (partner leave) with 100% salary;

partly paid parental leave;

the possibility to set up a workplace at home;

a pension at ABP for which UvA pays two third part of the contribution;

the possibility to follow courses to learn Dutch;

help with your registration at UvA Staff Housing (application for a studio or small apartment when you're moving from abroad).

Are you curious to read more about our extensive package of secondary employment benefits, take a look .

About us

The is the Netherlands' largest university, offering the widest range of academic programmes. At the UvA, 30,000 students, 6,000 staff members and 3,000 PhD candidates study and work in a diverse range of fields, connected by a culture of curiosity.

The has a student body of around 8,000, as well as 1,800 members of staff working in education, research or support services. Together, we create a vibrant, challenging and well-equipped research environment at Amsterdam Science Park. Researchers and students at the Faculty of Science are fascinated by every aspect of how the world works, be it elementary particles, the birth of the universe or the systems underlying biological processes.

The is one of eight research institutes of the Faculty of Science at the University of Amsterdam. The research at IBED aims to unravel how ecosystems function in all their complexity, and how they change due to natural processes and human activities. At its core lies

an integrated systems approach to study biodiversity, ecosystems and the environment. IBED adopts this systems approach to ecosystems, addressing abiotic and biotic factors, and the interplay between those. The IBED vision includes research encompassing experimental and theoretical approaches at a wide variety of temporal and spatial scales, i.e. from molecules and microorganisms to patterns and processes occurring at the global scale. The University of Amsterdam has . Furthermore, IBED has a dedicated with specialized knowledge of bioinformatics, (geo)database management and scientific programming. IBED also works with non-academic partners to deliver transdisciplinary science for society.

Want to know more about our organisation? Read more about the University of Amsterdam.

Any questions?

Do you have any questions or do you require additional information? Please contact:
Hanna ten Brink, Assistant Professor

T: +31 20 525 6021

Job application

If you feel the profile fits you, and you are interested in the job, we look forward to receiving your application. We encourage people from under-represented groups to apply. You can apply online via the button below. We accept applications until and including **20 May 2024**.

Applications should include the following information (all files besides your cv should be submitted in one single pdf file):

a detailed CV including the months (not just years) when referring to your education and work experience;

a letter of motivation;

contact information for two academic references.

Only complete applications received within the response period via the link below will be considered.

A knowledge security check can be part of the selection procedure.

(for details:)

The interviews will be held in the course of May - June.

The UvA is an equal-opportunity employer. We prioritize diversity and are committed to creating an inclusive environment for everyone. We value a spirit of enquiry and perseverance, provide the space to keep asking questions, and promote a culture of curiosity and creativity.

No agencies please.

Specifications

max. 38 hours per week

€2770—€3539 per month

Amsterdam

University of Amsterdam (UvA)

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