



# Doctoral (PhD) student position in microbiome research in women's health (industrial PhD)

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## Do you want to contribute to improving human health?

*To be a doctoral student means to devote oneself to a research project under supervision of experienced researchers and following an individual study plan. For a doctoral degree, the equivalent of four years of full-time doctoral education is required.*

## The research group

The Center for Translational Microbiome Research (CTMR) builds on a deep understanding of translational microbiome research and has established a broad technical, biological, clinical, and epidemiological platform for studying complex microbiological communities in well-defined human materials. CTMR aims to better understand the contribution of the human microbiome to physiology and pathophysiology with the goal to open opportunities for development of novel therapies in gastroenterology, reproductive health, and neonatology. Focus of this PhD project is to study the response of the vaginal microbiome to innovative treatments of bacterial vaginosis, a condition that affects about 30% of women worldwide.

The project will be conducted at CTMR within the Women's health research team, led by Associate Prof. Ina Schuppe Koistinen. The PhD position is funded by the Swedish Foundation for Strategic Research within the framework of the Industrial Doctoral Student program 2021 in collaboration with Gedeia Biotech in Lund. Associate Professor Helena Strevens, Senior consultant and Head of Antenatal Care, Skåne University Hospital in Lund and medical director at Gedeia Biotech, will be co-supervising the PhD student. The doctoral student will be employed at the company Gedeia Biotech but placed at CTMR and follow the doctoral educational program at Karolinska Institutet.

Gedeia Biotech is a small biotech company developing a novel, antibiotic free treatment for vaginal infections, in cooperation with gynecological clinics, clinical research organizations and other partners. Gedeia was founded by scientists at Lund University and keeps a scientific approach to every step in the product development. The company is in an exciting phase; an approval of pHyph is expected this year.

## The doctoral student project and the duties of the doctoral student

In this PhD-project, advanced sequencing techniques coupled with computational pipelines, machine learning and mathematical modelling will be used to determine the microbial etiology of bacterial vaginosis and factors associated with successful, antibiotic-free treatment with pHyph. pHyph is a vaginal tablet currently under development at Gedeia Biotech for treatment of bacterial vaginosis and vulvovaginal candidiasis. pHyph lowers vaginal pH to its natural level, removes the biofilm and restores the healthy vaginal microbiome in the vagina, thereby reducing the risk of recurrent bacterial vaginosis.

Based on data from a large collection of vaginal samples, the PhD student will investigate how the composition of the vaginal microbiome differs in healthy women from women diagnosed with bacterial vaginosis and fungal infections. Furthermore, the impact of antibiotic and antibiotic-free

treatments on the vaginal microbiome and risk of recurrence will be studied including the development of antimicrobial resistance. This PhD-project will form a transdisciplinary collaboration between microbiome researchers, biostatistics/bioinformatics and clinical experts. In the process of understanding the microbial mechanisms involved, we will also develop deeper insights into the dynamics of recurrence and train a professional ready to bridge the gap between basic science and industrial applications in women's health and microbiome sciences.

## What do we offer?

A creative and inspiring environment full of expertise and curiosity. Karolinska Institutet is one of the world's leading medical universities. Our vision is to pursue the development of knowledge about life and to promote a better health for all. At Karolinska Institutet, we conduct successful medical research and hold the largest range of medical education in Sweden. As a doctoral student you are offered an individual research project, a well-educated supervisor, a vast range of elective courses and the opportunity to work in a leading research group. Karolinska Institutet collaborates with prominent universities from all around the world, which ensures opportunities for international exchanges. You will be employed on a doctoral studentship which means that you receive a contractual salary. Employees also have access to our modern gym for free and receive reimbursements for medical care.

## Eligibility requirements for doctoral education

In order to participate in the selection for a doctoral position, you must meet the following general **(A)** and specific **(B)** eligibility requirements at latest by the application deadline.

It is your responsibility to certify eligibility by following the instructions on the web page Entry requirements (eligibility) for doctoral education.

### A) General eligibility requirement

You meet the general eligibility requirement for doctoral/third-cycle/PhD education if you:

1. have been awarded a second-cycle/advanced/master qualification (i.e. master degree), **or**
2. have satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the advanced/second-cycle/master level, **or**
3. have acquired substantially equivalent knowledge in some other way in Sweden or abroad.\*

Follow the instructions on the web page Entry requirements (eligibility) for doctoral education.

\*If you claim equivalent knowledge, follow the instructions on the web page [Assessing equivalent knowledge for general eligibility for doctoral education](#).

### B) Specific eligibility requirement

You meet the specific eligibility requirement for doctoral/third-cycle/PhD education if you:

- Show proficiency in English equivalent to the course English B/English 6 at Swedish upper secondary school.

Follow the instructions on the web page [English language requirements for doctoral education](#).

*Verification of your documents* Karolinska Institutet checks the authenticity of your documents. Karolinska Institutet reserves the right to revoke admission if supporting documents are discovered to be fraudulent. Submission of false documents is a violation of Swedish law and is considered grounds for legal action.

(A) and (B) can only be certified by the [documentation requirement for doctoral education](#).

## Skills and personal qualities

The applicant must have a basic theoretical knowledge in molecular biology and bioinformatics. It is desirable that the applicant also has experience in microbiome analysis using bioinformatics tools, is familiar with working in Linux environments, as well as be able to write scripts in R or Python. The applicant must be fluent in both written and spoken English. A positive attitude and strong drive to pursue research is a must. You have excellent communication skills and are expected to work both independently and within a team. Emphasis will be put on personal qualities in the selection process.

## Terms and conditions

The doctoral student will be employed on a doctoral studentship maximum 4 years full-time.

## Application process

Submit your application and supporting documents through the Varbi recruitment system. Use the button in the top right corner and follow the instructions. We prefer that your application is written in English, but you can also apply in Swedish.

Your application must contain the following documents:

- A personal letter and a curriculum vitae
- Degree projects and previous publications, if any
- Any other documentation showing the desirable skills and personal qualities described above
- Documents certifying your general eligibility (see **A** above)
- Documents certifying your specific eligibility (see **B** above)

## Selection

A selection will be made among eligible applicants on the basis of the ability to benefit from doctoral education. The qualifications of the applicants will be evaluated on an overall basis.

Karolinska Institutet uses the following bases of assessment:

- Documented subject knowledge of relevance to the area of research
- Analytical skill
- Other documented knowledge or experience that may be relevant to doctoral studies in the subject.

All applicants will be informed when the recruitment is completed.

<https://ki.se/en/mtc/ctmr-research-in-womens-reproductive-health>

<https://gedeabiotech.com>

## Want to make a difference? Join us and contribute to better health for all

<b>Type of employment</b>	PhD placement
<b>Contract type</b>	Full time
<b>Number of positions</b>	1
<b>Working hours</b>	100
<b>City</b>	Solna
<b>County</b>	Stockholms län
<b>Country</b>	Sweden
<b>Reference number</b>	STÖD 2-212/2022
<b>Contact</b>	<ul style="list-style-type: none"><li>• Ina Schuppe Koistinen, ina.schuppe.koistinen@ki.se</li><li>• Henry Wölling, SEKO, henry.wolling@ki.se</li></ul>
<b>Union representative</b>	

- Taher Darreh-Shori, SACO, ta<sup>h</sup>er.darreh-shori@ki.se
- Carina Eklund, OFR, carina.eklund@ki.se

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