



PhD Position Plant-microbiome Interaction

Faculty of Science – Swammerdam Institute for Life Sciences

Publication date	10 June 2021
Closing date	9 July 2021
Level of education	Master's degree
Hours	38 hours per week
Salary indication	€2,395 to €3,061 gross per month
Vacancy number	21-459

Plant roots house one of the most diverse microbial communities on Earth. Potentially these can be used to improve stress resilience of crops and enable sustainable food production. You will study relations between plant genotype and microbiome functionality changes under stress as well as the trade-offs with other stress mitigating plant strategies. You will collect experimental data on how tomato responds to a lack of phosphorus, what mitigation strategies tomato and its wild relatives use and how microbiome recruitment fits into these strategies. From these data, using advanced data integration approaches and causal relationship analyses, you will look for evidence of decision points and trade-offs in changes in plant nutrient acquisition strategies, including through the microbiome. This will be further supported by a GWAS experiment in which you will look for genomic associations for nutrient acquisition and microbiome recruitment. Gene candidates will be verified using mutants and/or Virus Induced Gene Silencing.

What are you going to do?

In this PhD position, you will use experimental work and data integration approaches to unravel trade-offs in the plant-microbiome interaction under stress. You are expected to:

- analyse the effect of phosphate starvation on gene expression, root exudate composition and plant root microbiome recruitment and microbiome function;
- use experimental and data integration approaches to analyse the trade-off between recruitment of the microbiome and other P-starvation responses;
- supervise bachelor and Master students.

Feedback

What do we require of you?

- MSc in Biology or Plant Science;
- experience with experimental plant science, RNAseq and/or metabolomics, incl. data analysis;
- experience with data analysis and/or bioinformatics;

- affinity with (plant) microbiome analysis;
- fluency in English, both written and spoken.

Our offer

A temporary contract for 38 hours per week for the duration of four years (the initial contract will be for a period of 18 months and after satisfactory evaluation it will be extended to 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.

Based on a full-time appointment (38 hours per week) the gross monthly salary will range from €2395 in the first year to €3061 (scale P) in the last year. This is exclusive 8% holiday allowance and 8.3% end-of-year bonus. A favourable tax agreement, the '30% ruling', may apply to non-Dutch applicants. The Collective Labour Agreement of Dutch (<http://www.vsnul.nl/cao-universiteit.nl.html>) Universities is applicable.

Are you curious about our extensive package of secondary employment benefits like our excellent opportunities for study and development? Take a look [here](https://www.uva.nl/en/faculty/faculty-of-science/working-at-the-faculty/working-at-the-faculty-of-science.html) (<https://www.uva.nl/en/faculty/faculty-of-science/working-at-the-faculty/working-at-the-faculty-of-science.html>).

Questions?

Do you have questions about this vacancy? Or do you want to know more about our organisation? Please contact:

- [Dr. Anouk Zancarini](mailto:a.a.zancarini@uva.nl) (<mailto:a.a.zancarini@uva.nl>), Plant Hormone Biology group,
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About us

The [Faculty of Science](https://www.uva.nl/en/faculty/faculty-of-science/faculty-of-science.html) (<https://www.uva.nl/en/faculty/faculty-of-science/faculty-of-science.html>) has a student body of around 7,000, as well as 1,600 members of staff working in education, research or support services. 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 functioning of the brain.

The [Swammerdam Institute for Life Sciences \(SILS\)](http://sils.uva.nl/) (<http://sils.uva.nl/>) is one of the Faculty of Science's largest institutes. Its approximately 240 scientists and staff members work in 16 research groups that perform excellent research centred on three themes: 1) Cell & Systems Biology, 2) Neurosciences, and 3) Microbiology and 4) Green Life Sciences.



Within the Research Priority Area Systems Biology several of these groups are involved in the host-microbiome interaction. This PhD position is shared by the [Plant Hormone Biology](https://sils.uva.nl/content/research-groups/plant-hormone-biology/plant-hormone-biology.html) (<https://sils.uva.nl/content/research-groups/plant-hormone-biology/plant-hormone-biology.html>) and [Biosystems Data Analysis](https://sils.uva.nl/content/research-groups/biosystems-data-analysis/biosystems-data-analysis.html) (<https://sils.uva.nl/content/research-groups/biosystems-data-analysis/biosystems-data-analysis.html>) groups. The Plant Hormone Biology group investigates the role of plant hormones and other signalling molecules in the communication of plants with other organisms. The Biosystems Data Analysis group develops and implements advanced statistical and machine learning tools for integrating omics data.

Job application


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.

Do you recognize yourself in the job profile? Then we look forward to receiving your application by 9 July 2021. You can apply online by using the link below.

Applications in .pdf should include:

- a motivation letter;
- a CV, including a list of publications
- contact information (name and email) of max. two academic references;

We will invite potential candidates for a first round of interviews between 15 July 2021 (first interview) and 20 July 2021 (second interview).

[Apply now](https://ssl1.peoplexs.com/Peoplexs22/CandidatesPortalNoLogin/ApplicationForm.cfm?PortalID=16107&VacatureID=1156408)  (<https://ssl1.peoplexs.com/Peoplexs22/CandidatesPortalNoLogin/ApplicationForm.cfm?PortalID=16107&VacatureID=1156408>)

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