Laura W. Dijkhuizen

Currently living in Utrecht, the Netherlands
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I'm a **plant biologist** and **data educator** passionate about making complex science work in real-world settings.
I enjoy **leading teams**, ensuring good **governance**, and enabling **reproducible analysis**. I thrive where collaboration, strategy, and impact meet.

Professional Attributes

Bridge builder between data, policy, and people

Trusted **educator & mentor** for 500+ professionals

Skilled **chair & negotiator** representing 2000+ PhDs to diverse stakeholders and policy levels

Experienced in academic **project leadership** and team coordination

Advocate for **open science & reproducibility**

Genomics & metagenomics expert (R, Python, Bash)

Strong biological background in plant biology, ecology, and bioinformatics

Career Objective

I aim to grow into a **leadership role** where I can bridge science, data, and people. I want to **shape and facilitate** teams' **ambition** to do **meaningful work** with clarity, structure, and scalable systems.

Employment & Education

2022 – now. **Lecturer & Trainer** in programming, bioinformatics & data science for PhD candidates & postdocs (GitHub)
Theoretical Biology & Bioinformatics Group at Utrecht University

2017 – 2022. **PhD Researcher and teacher** I secured funding for my own PhD on the (meta)genomics of novel crop *Azolla* (GitHub)
Molecular Plant Physiology Group, Utrecht University.

2010 – 2017. **MSc / BSc** Environmental Plant Biology
Utrecht University

Leadership & Project Management

2023 – now. Member, **Department Advisory Committee** , Biology Dept., Utrecht University. – feedback on strategic priorities & governance.

2021. Member, TU Delft **Research Assessment Committee** (Chemical Engineering & Biotechnology). – "Visitatie commissie" in Dutch (Report).

2020 – 2021. Member, **Faculty Open Science Implementation Team** & **UU Open Science Platform**. – driving reproducibility policies and innovations (Interview).

2019 – 2021. Member, **Curriculum Committee** , M.Sc. Bioinformatics& Biocomplexity. – Design a brand new Masters. (link)

2017 – 2021. **PhD Council Chair** and member **Board of Studies** (GS-LS) — representing ∼2000 PhDs. – negotiated new PhD graduation guidelines with three faculties.

2017 – 2021. **PhD Council Representative** , Institute of Environmental Biology.

Key Achievements

Trained 500+ PhD candidates & postdocs in my self made bioinformatics curriculum for professionals. (GitHub)

Skilled builder of reproducible pipelines like Nanopore variant calling (link) , pangenomics (link) , phylogeny (link) , and metagenome analysis (link). – Turning big data, into insight.

Chaired a council representing ∼2000 PhD candidates, leading organisational change for new graduation guidelines adopted by three faculties.

Experienced stakeholder manager and communicator serving on 5 more strategic committees (See Project Management section).

Experienced public speaker from elementary schools to scientific conferences and of course classroom (Outreach page).

Build and maintained a bioinformatics Linux server (link) enabling experimentalist colleagues to use my infrastructure with ease.

Worked with a wide variety of data. From PacBio long reads to microRNA-seq and from optical mapping to handwritten notes.

Teaching & Training

Lecturer & Trainer (2022–now): Design and deliver modular workshops in R, Python & Bash for PhD candidates and postdocs, tailoring content to individual research goals and team projects (GitHub).

Course Coordinator (2020–2021): Led the "Introduction to Bioinformatics" Master's course – integrating 8+ domain experts from across Utrecht Science Park into a unified, hands-on curriculum (GitHub).

Thesis Supervisor (2017–2022): Mentored 10+ MSc/BSc students on computational biology and plant physiology projects guiding experimental design, data pipelines, and results communication.

Workshop Facilitator & TA (2017–2020): Supported courses in Systems Biology, Plant Physiology, Molecular Genetics Techniques, and specialized bioinformatics bootcamps like Git.

Outreach & Communication

Television: Local TV interview on *Azolla* ferns (2017; Dutch) – Watch. And an interview for "De Kennis van Nu" popular science program (2018; Dutch) – Watch.

Radio: BNR national radio feature on Azolla (2017; Dutch) – Link

Print: Feature in AD newspaper (2018; Dutch) – Read

Lectures & Events: Frequent invited speaker and demonstrator at public science events, including gene editing seminars, hands-on plant biology demos, and outreach talks for schools (2018–2022).

Selected Scientific Publications

Genomics & Bioinformatics

- **Genome Engineering by RNA-Guided Transposition for *Anabaena* sp.** ACS Synthetic Biology (2024). DOI
- **Is there foul play in the leaf pocket?** New Phytologist (2018). DOI
- **Azolla ferns testify: seed plants and ferns share a common ancestor for LAR** New Phytologist (2021). DOI

Workflow & Reproducible Research

- **LAR phylogeny for Gungor et al. 2020: The complete analysis and dataset** Dataset (2020-07-24). DOI
- **Chapter 3: Hidden treasures: public sequencing data of symbiotic Azolla ferns harbours a genus-wide metagenome** Thesis chapter phd repo link

Plant Physiology & Ecology

- **The crane fly glycosylated triketide δ-lactone cornicinine elicits akinete differentiation of the cyanobiont in aquatic *Azolla* fern symbioses** Plant, Cell & Environment (2024). DOI
- **Control of the *Azolla* symbiosis sexual reproduction: ferns to shed light on the origin of floral regulation?** Preprint (2020). DOI

Interests & Volunteering

Volunteer Facilitator of monthly discussion groups and retreats for youth on gender fostering inclusive dialogue

Sports: Rock climbing, cycling & sailing

Event Organizer: "Bèta-dag" for 150+ high-school students and open science workshops

Advanced nature **photographer:** cover image featured on *Nature Plants* (Link)

Technical Proficiencies

R	●●●●●	Snakemake	●●●●●
Python	●●●●○	Conda	●●●●●
Bash	●●●●●	SQL	●●○○○
HPC	●●●●●	Machine learning	●●●●○
Docker	●●●○○	Visualization	●●●●●
Git	●●●●○	Code Notebooks	●●●●●

Languages

English	●●●●●
Dutch	●●●●●

This CV was made with LaTeX and GitHub Actions GitHub

Last updated: Thursday 13th November, 2025

Scientific publications & PhD chapters

All publications are listed at lauradijkhuizen.com/science and ORCID: 0000-0002-4628-7671

- **Güngör, E.; Savary, J.; Adema, K.; Dijkhuizen, L.W.; et al.** (2024-07) "The crane fly glycosylated triketide δ-lactone cornicinine elicits akinete differentiation…," *Plant, Cell & Environment*. DOI: 10.1111/pce.14907
- **Arévalo, S.; Pérez Rico, D.; Abarca, D.; Dijkhuizen, L.W.; et al.** (2024-03-15) "Genome Engineering by RNA-Guided Transposition for *Anabaena* sp. PCC 7120," *ACS Synthetic Biology*. DOI: 10.1021/acssynbio.3c00583
- **Arévalo, S.; Pérez Rico, D.; Abarca, D.; Dijkhuizen, L.W.; et al.** (2022-09-19) "Genome engineering by RNA-guided transposition for *Anabaena* PCC 7120," Preprint. DOI: 10.1101/2022.09.18.508393
- **Güngör, E.; Brouwer, P.; Dijkhuizen, L.W.; et al.** (2021-01) "Azolla ferns testify: seed plants and ferns share a common ancestor…," *New Phytologist*. DOI: 10.1111/nph.16896
- **Dijkhuizen, L.W.; Güngör, E.; et al.** (2020-07-24) "LAR phylogeny for Gungor et al. 2020: The complete analysis and dataset," Dataset. DOI: 10.5281/zenodo.3959057

PhD Thesis chapters

- **Chapter 1: A hitch-hiker's guide to Azolla symbiosis genomics**
  A broad, less formal introduction to Azolla symbiosis genomics, aimed at engaging a wider scientific audience and providing context for the thesis.
  Laura W. Dijkhuizen
- **Chapter 2: Foul play in the leaf pocket? The metagenome of floating fern Azolla reveals endophytes that do not fix N_2 but may denitrify**
  Discovery and analysis of prokaryotic DNA in Azolla, identification of associated bacterial genomes, and investigation of their metabolic pathways and ecological roles.
  Laura W. Dijkhuizen, et al. DOI
- **Chapter 3: Hidden treasures: public sequencing data of symbiotic Azolla ferns harbours a genus-wide metagenome**
  Development of a workflow to enrich and study genomes of bacteria associated with all sequenced Azolla species, revealing systematic presence and vertical transfer of key symbionts.
  Laura W. Dijkhuizen, et al.
- **Appendix B: Metagenomics practical**
  An educational practical designed to teach metagenomics principles and techniques to Life Sciences students, using Bash and Jupyter notebooks for hands-on learning.
  Laura W. Dijkhuizen GitHub
- **Chapter 4: Forever together: One Nostoc azollae is symbiont to all Azolla species**
  Comparative genomics of the main Azolla symbiont, N. azollae, showing near-identical genomes across hosts, high pseudogene content, and phylogenomic placement within Nostocales.
  Laura W. Dijkhuizen, et al.
- **Chapter 5: It takes two: Far-Red light induces the Azolla-Nostoc symbiosis sexual reproduction**
  Investigation of sexual reproduction and symbiont transmission in Azolla/N. azollae, including environmental triggers, gene regulation, and evolutionary implications for crop application.
  Laura W. Dijkhuizen, Tabatabaei, B.E.S., Brouwer, P., et al. DOI
- **Chapter 6: One, Two, Tree! A workflow for creating state-of-the-art phylogenies designed for reproducibility with JuPyter, conda and git**
  Description of a reproducible workflow for phylogenetic tree inference in land plants, using open-source tools and providing resources for semi-automatic tree annotation.
  Laura W. Dijkhuizen