
Rebecca J. Lökfors (Wicker)

PhD Green Chemical Technology

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EXPERIENCE

October 2024 — Present

Postdoctoral Researcher • Department of Technical Physics •
University of Eastern Finland, FI

August 2020 — February 2024

Junior Researcher // PhD Candidate • School of Engineering •
Lappeenranta-Lahti University of Technology, FI

May 2020 — Present

Research Consultant (remote work) • Renewable Energy • AnalytIQ Consult,
Djibouti

January 2019 — July 2020

Junior Researcher // PhD Candidate • Department of Environmental Science •
University of Eastern Finland, FI

July 2017 — July 2018

Research Fellow • Marine Biogeochemistry • University of Southern Denmark,
DK

January 2015 — August 2015

Vaccine Process Development Scientist • Third-Party Analyst • Eurofins
Lancaster Labs // Merck, Sharp, and Dohme, USA

EDUCATION

PhD 2023 — Lappeenranta-Lahti University of Technology, Mikkeli

School of Engineering, Department of Separation Science

Doctor of Philosophy in Green Chemical Technology

Supervisor: Prof. Amit Bhatnagar

MSc 2017 — University of Eastern Finland, Joensuu

Master of Science in Environmental Biology, Minor in Environmental Law and
Policy

Supervisor: Dr. Teemu Tahvanainen

BSc 2015 — Wilkes University, USA

Bachelor of Science in Biology

Supervisor: Dr. William Biggers

PUBLICATIONS

Production of biomethane, biohydrogen, and volatile fatty acids from Nordic phytoplankton biomass grown in blended wastewater (2023)

<https://doi.org/10.1016/j.cej.2023.147809>

Hybrid planktonic-biofilm cultivation of a Nordic mixed-species photosynthetic consortium: A pilot study on carbon capture and nutrient removal (2023)

<https://doi.org/10.1016/j.cej.2023.144585>

The effects of light regime on carbon cycling, nutrient removal, biomass yield, and polyhydroxybutyrate (PHB) production by a constructed photosynthetic consortium (2022)

<https://doi.org/10.1016/j.biortech.2022.127912>

The potential of mixed-species biofilms to address remaining challenges for economically-feasible microalgal biorefineries: A review (2022)

<https://doi.org/10.1016/j.cej.2022.138481>

Biologically-mediated carbon capture and utilization by microalgae towards sustainable CO₂ biofixation and biomass valorization – A review (2021)

<https://doi.org/10.1016/j.cej.2021.130884>

Emergent green technologies for cost-effective valorization of microalgal biomass to renewable fuel products under a biorefinery scheme (2021)

<https://doi.org/10.1016/j.cej.2021.128932>

Application of Nordic microalgal-bacterial consortia for nutrient removal from wastewater (2020)

<https://doi.org/10.1016/j.cej.2020.125567>

PUBLISHED THESES

Doctoral Dissertation (2023)

Bioprospecting for Nordic photosynthetic consortia for wastewater treatment, carbon capture, and value creation

<https://urn.fi/URN:ISBN:978-952-412-037-1>

Master's Thesis (2017)

Effect of Sphagnum cover on GHG evolution and decomposition-chain exoenzyme activity of arctic thermokarst peat

<http://urn.fi/urn:nbn:fi:uef-20170712>

GRANTS

Valtion tutkimusrahoitus, €35,000

April 2026-April 2027

Itä-Suomen yhteistyöalueen, Pohjois-Savon hyvinvointialue, Tohtoritason tutkimushankkeet

(Eastern Finland cooperation area, North Savo Wellbeing area, doctoral-level research projects)

Valtion tutkimusrahoitus, €45,000

April 2025-April 2026

Itä-Suomen yhteistyöalueen, Pohjois-Savon hyvinvointialue, Tohtoritason tutkimushankkeet

Tekniikkan Edistämissätiö, €24,000

June 2022-June 2023

Grant # 8883

Tekniikkan Edistämissätiö, €16,000

June 2020-June 2021

Grant # 7433

Ekipa EnBW, €1000

June 2020

Third place finalist, CO₂ Challenge

Olvi Säätiö, €14,000

June 2019-June 2020

Grant # 201910417

TECHNICAL SKILLS

- Gas chromatography (GC)
- HPLC/UPLC; polarity and size exclusion
- Mass spectrometry/IRMS
- Radioactive tracer labelling
- Liquid scintillation counting
- UV & IR spectroscopy
- Hyperspectral imaging
- Spectrophotometry/fluorometry
- NMR analysis
- PCR/gel electrophoresis
- Tangential flow filtration
- Anoxic/aseptic techniques
- Optical microscopy
- Ecological sampling techniques
- Cell culture (liquid and solid)
- Bioreactor/mesocosm design and construction
- Statistics, GraphPad Prism, R, PC ORD, SigmaPlot, and SPSS software

PUBLIC OUTREACH

Interview, 2021

“Grant for fighting climate change”, Gasum Gas Fund

<https://www.gasum.com/en/About-gasum/Information-about-Gasum/Research-and-development/Gasum-gas-fund/researcher-stories/rebecca-wicker/>

Guest Article, November 2019

“From the lab to the streets: why scientists join the climate movement.” The Beam Magazine.

medium.com/thebeammagazine/from-the-lab-to-the-streets-why-scientists-join-the-climate-movement-9c852333a311

World Speech Day, March 2017

“The Crucial Roles of Non-Conventional Learning”, Joensuu Debate Society.

<https://youtu.be/hX9shRvSAcU>

TedX Satellite Event, January 2016

“Fear and Courage in Scientific Advancement”. University of Eastern Finland.

<https://youtu.be/4x9emtUrtTg>

VOLUNTEER WORK

Expert Reviewer, IPCC AR7 Working Group 1, 2026

Providing peer review for the latest Assessment Report, assigned Chapter 4: “Advances in process understanding of Earth system changes”

Dog Walker; Mikkeli Animal Protection Agency (MESY), 2020-2023

Specialty care, handling, and in-home care for large and/or aggressive dogs. Mikkelin Eläinsuojeluyhdistus Ry, Porrassalmenkatu 69B, 50100 Mikkeli, FI

Coordinator; Scientists for Extinction Rebellion, 2019-2020

International (remote work); conflict resolution and organisation restructuring. <https://www.scientistsforxr.earth>

Children’s Activities Coordinator; Organisation Earth, 2016

Av. Republic 67, Athens, Greece, 13122
Piraeus and Skaramagas Camps

Refugee Recreation Volunteer; Starfish Foundation, 2016

Molyvos, Lesvos Prefecture, Greece
Mantamados Camp for Unaccompanied Minors