Joseph Gaudard

MSc Environmental Science

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CURRENTLY

PhD Candidate
Effects of global change drivers on alpine grasslands carbon dynamics
University of Bergen (UiB) and Bjerknes Centre for Climate Research (BCCR), Bergen, Norway
May 2020 — Present

NATURAL SCIENCES

Researcher
Setting up the ecosystem gas fluxes work package in **the TERRA project**
University of Bergen (UiB) / The University Centre in Svalbard (UNIS), Longyearbyen, Svalbard
June 2024

Master student and field assistant
Measuring CO_2 and CH_4 fluxes in a tundra fertilisation experiment
Arctic Station, Qeqertarsuaq, Greenland June 2018 — September 2018

Intern
Participation in scientific and management activities of the preserve
Denezhkin Kamen Zapovednik (Ecological preserve), Severoouralsk, Russia
July 2017 — - September 2017

EDUCATION

Environmental monitoring in the arctic, with a particular focus on greenhouse gas flux studies: Part 2 (BEFLUX) (3 ECTS)
Graduate School of Technical Sciences, Aarhus University, Greenland Institute for Natural Resources, Nuuk, Greenland 2023

Arctic in a Changing Climate (5 ECTS)
University of Gothenburg (GU), Gothenburg, Sweden 2022

Snow and Snow Cover (6 ECTS)
University of Alaska Fairbanks (UAF), Fairbanks, USA (online) 2021

Ecological Climatology (10 ECTS)
University of Oslo (UiO), Oslo, Norway (online) 2021

Arctic Winter Ecology (10 ECTS)
The University Centre in Svalbard (UNIS), Longyearbeen, Norway 2019

European Double Master in Environmental Science (enveuro.eu)
University of Natural Resources and Life Sciences (BOKU), Vienna, Austria 2017 — 2019

European Double Master in Environmental Science (enveuro.eu)
University of Copenhagen (UCPH), Copenhagen, Denmark 2016 — 2017

Bachelor of Science in Geosciences and Environment
Université de Lausanne (UNIL), Lausanne, Switzerland 2010 — 2013

Student exchange program
Université du Québec à Chicoutimi (UQAC), Chicoutimi, Canada 2012 — 2013

TEACHING

PHD LEVEL

Plant Functional Traits Course 6 (5 ECTS)
Leading ecosystem functioning group
University of Bergen, University of Arizona 2022

MASTER LEVEL

Current Topics in Biodiversity, Evolution and Ecology (10 ECTS)
Leading module on global change experiments 2023, 2024
Course responsible 2022
University of Bergen

SUPERVISION

Belde, V. (2024). Linking methane fluxes and oxidation rates to methane oxidizing bacteria in a changing arctic soil community [Master's thesis]. University of Bergen (UiB) / The University Centre in Svalbard (UNIS).

Little, E. (2022). Effect of climate warming on alpine soil decomposition in western norway using the tea bag index and soil respiration along an altitudinal gradient [Master's thesis]. University of Bergen (UiB) / Delft Technical University (TU Delft).

OTHER

Which landscape does this soil sample come from?
Popular science collaboration
VilVite (Science museum for children), Bergen 2022

MILITARY ENGAGEMENTS

1LT officer (NATO OF1), Swiss Armed Forces

Peace support operation
Liaison and Monitoring Team (LMT) Leader
Swisscoy contingent 33, Kosovo 2015 — 2016

Officer training
Rescue platoon leader
Military Disaster Relief Rapid Response Command, Switzerland 2013 — 2015

LANGUAGES

French
Native speaker

English
Professional working proficiency
Certificate in Advanced English, CEFR Level C1 (2016)

German
Limited working proficiency
Military activities mainly conducted in German

Russian
Elementary proficiency
6 weeks language internship, Irkutsk State Linguistic Universtiy (2016)

Norwegian (Bokmål)
Elementary proficiency
Norwegian Language and Culture for Foreign Language Students, level 1 (2021)

PEER-REVIEWED PUBLICATIONS

Gaudard, J., Telford, R., Vandvik, V., & Halbritter, A. H. (2024). Fluxible: An R package to calculate ecosystem gas fluxes in a reproducible and automated workflow.

Halbritter, A. H., Vandvik, V., Cotner, S. H., Farfan-Rios, W., Maitner, B. S., Michaletz, S. T., Oliveras Menor, I., Telford, R. J., Ccahuana, A., Cruz, R., et al. (2024). Plant trait and vegetation data along a 1314 m elevation gradient with fire history in puna grasslands, perú. Scientific Data, 11(1), 225.

Maes, S. L., Dietrich, J., Midolo, G., Schwieger, S., Kummu, M., Vandvik, V., Aerts, R., Althuizen, I. H. J., Biasi, C., Björk, R. G., Böhner, H., Carbognani, M., Chiari, G., Christiansen, C. T., Clemmensen, K. E., Cooper, E. J., Cornelissen, J. H. C., Elberling, B., Faubert, P., … Dorrepaal, E. (2024). Environmental drivers of increased ecosystem respiration in a warming tundra. Nature, 1–9. **https://doi.org/10.1038/s41586-024-07274-7**

Belien, E., Rossi, S., Morin, H., Deslauriers, A., & Gaudard, J. (2014). Testing foliar absorption in black spruce [Picea mariana (Mill.) BSP] saplings. American Journal of Experimental Biology, 1, 52–60.

CONFERENCES & TALKS

Fluxible: an R package to do the boring part of my work
Seminar
Ecological and Environmental Change Research Group, University of Bergen 2024

Building time traveling field experiments
Guest talk
Guides Eve (Svalbard Guide Association) 2024

Fieldwork leadership, inclusivity and safety – the blind spot of “easy” fieldwork
Seminar
Ecological and Environmental Change Research Group, University of Bergen 2024

Fluxible: An R package to calculate ecosystem gas fluxes in a reproducible and automated workflow
Poster
European Geosciences Union Annual Meeting, Vienna, Austria 2024

Mitigation effects of grazing on climate change impacts in alpine grasslands
Oral presentation
Research school on changing climates in the coupled earth system (CHESS) annual meeting, Vikersund, Norway 2023

A story of curves: calculating ecosystem gas fluxes
Seminar
Ecological and Environmental Change Research Group, University of Bergen 2023

Carbon fluxes in alpine grasslands
Guest seminar
Unité Mixte de Recherche METIS (Milieux environnementaux, transferts et interactions dans les hydrosystèmes et les sols), Sorbonne Universités, Paris, France 2023

BIOustide: guidelines for fieldwork that is safe, comfortable and inclusive
Seminar
Ecological and Environmental Change Research Group, University of Bergen 2023

Could grazing mitigate effects of climate change on CO2 fluxes in alpine grasslands?
Oral presentation
International Mountain Conference, Innsbruck, Austria 2022

Effect of warming on carbon fluxes in alpine grasslands
Poster
5th Conference of Nordic Society OIKOS, Aarhus, Denmark 2022

Carbon fluxes response to warming in alpine grasslands
Poster
Research school on changing climates in the coupled earth system (CHESS) annual meeting, Tromsø - Bergen (on board Hurtigruten), Norway 2022

CO_2 fluxes in alpine grasslands in the context of climate change
Seminar
Ecological and Environmental Change Research Group, University of Bergen 2022

Carbon ecosystem-atmosphere exchange in arctic tundra in response to environmental changes
Poster pitch
Arctic Week, Ministry for Europe and Foreign Affairs, Paris, France 2019

Carbon ecosystem-atmosphere exchange in arctic tundra in response to environmental changes
Poster pitch
Euroleague for Life Sciences Scientific Student Conference, Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden 2019

Impacts of climate change on the carbon cycle in the arctic tundra during the growing season
Oral presentation
Euroleague for Life Sciences Scientific Student Conference, Wageningen University \& Research, Wageningen, Netherlands 2018

EuvEuro workshop
Organizer

Euroleague for Life Sciences Scientific Student Conference, Wageningen University \& Research, Wageningen, Netherlands 2018

EuvEuro workshop
Organizer
Euroleague for Life Sciences Scientific Student Conference, University of Copenhagen, Copenhagen, Denmark 2017

OTHER PUBLICATIONS

Gaudard, J., & Telford, R. J. (2024). Fluxible: Calculate ecosystem gas fluxes from raw data. **https://cran.r-project.org/package=fluxible**

Gaudard, J., & Soulé, J. (2022). BIOutside: Field safety for biologists in the wild. **https://bioutside.w.uib.no**

Gaudard, J. (2021). Décrypter: Cycle du carbone dans les écosystèmes froids. Carnets d'Aventures, 63.

Cotner, S., Enquist, B. J., Chacon, J., Maitner, B., Farfan-Rios, W., Michaletz, S., Garen, J., Gauthier, T.-L. J., Vandvik, V., Gya, R., Halbritter, A., Gaudard, J., Hošková, K., Pierfederici, M. E., Quinteros-Casaverde, N. L., Diaz, E. S., Jessup, L., Strydom, T., & Oppen, J. V. (2020). International scientists need better support during global emergencies. Times Higher Education.

Gaudard, J. (2019). Carbon ecosystem-atmosphere exchange in arctic tundra in response to environmental changes. Effects of increased water and phosphorus availability on carbon dioxide and methane fluxes [Master's thesis]. University of Copenhagen (UCPH) / University of Life Sciences in Vienna (BOKU).

FUNDING (170'000 NOK)

Fluxible: an R package to calculate ecosystem gas fluxes from closed loop chamber systems in a reproducible and automated workflow
800 USD
Li-COR Connect 2025 Travel Grant Award 2025

Fluxible: an R package to calculate ecosystem gas fluxes using a reproducible and automated workflow
17'202 NOK
Bergens Myrdyrkningsfond 2024

Environmental monitoring in the arctic, with a particular focus on greenhouse gas flux studies: Part 2 (BEFLUX)
8'000 DKK
Course travel grant 2023

Warmer climate, novel plant species and CO_2 fluxes in alpine grasslands
80'000 NOK
Bergens Myrdyrkningsfond 2022

Winter ecosystem respiration in alpine ecosystems
7'500 NOK
Olaf Grolle Olsen og Miranda Bødtkers legat 2022

Travelling grant for sustainable travel (I cycled Bergen - Aarhus and back) to the OIKOS (Nordic ecological society) conference

9’000 NOK
Klima og Energiomstilling 2021

Carbon fluxes in alpine grasslands in a warming climate
15’000 NOK
Olaf Grolle Olsen og Miranda Bødtkers legat 2021

PhD student education fund
20’000 NOK
University of Bergen (UiB) 2020

REFERENCES

Dr Aud H Halbritter
aud.halbritter@uib.no
PhD main supervisor
Departement of Biological Sciences and Bjerknes Centre for Climate Research, University of Bergen

Prof Vigdis Vandvik
Vigdis.Vandvik@uib.no
PhD co-supervisor, lab leader
Departement of Biological Sciences and Bjerknes Centre for Climate Research, University of Bergen

Dr Joachim P Töpper
joachim.topper@nina.no
PhD co-supervisor
Norwegian Institute for Nature Research

Prof Lise Øvreås
lise.ovreas@uib.no
TERRA project
Departement of Biological Sciences, University of Bergen