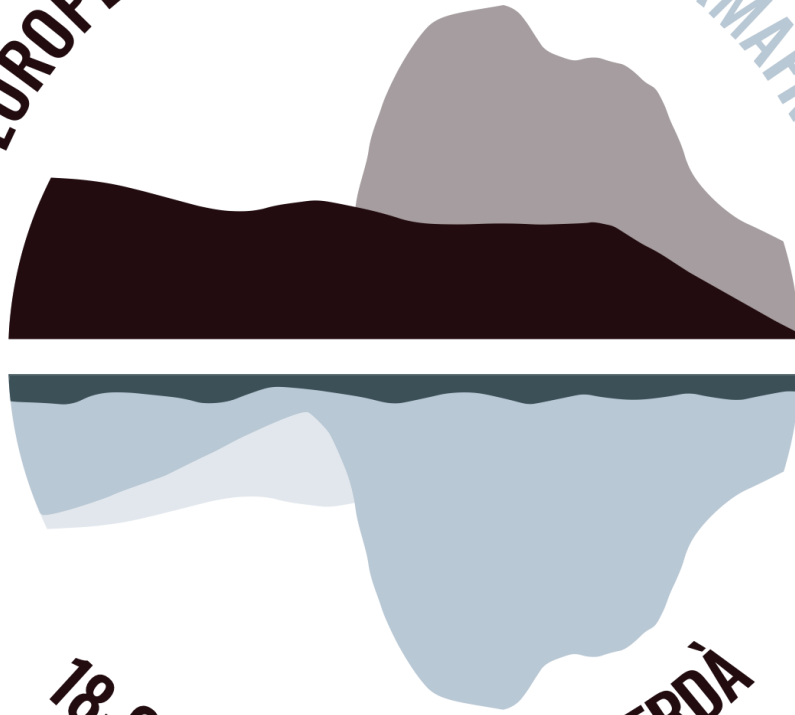


EUROPEAN CONFERENCE ON PERMAFROST



18-22 JUNE, 2023, PUIGCERDÀ

PYRN WORKSHOP

PROGRAM



THE PROGRAM

17th June 2023- CASINO CERETÀ

Plaça de Barcelona, 3, 175 20 Puigcerdà

9.00-9.15	Introduction to the PYRN Workshop
9.15-10.00	Growing old in permafrost research – H. Lantuit
10.00-10.45	Permafrost Carbon Feedbacks: Progress on defusing the permafrost carbon bomb and future opportunities – C. Treat
10.45-11.15	Coffee break
11.15-12.00	Boreal-Arctic Aquatic Methane Emissions: current estimates and future research directions – M. Kuhn
12.00-12.45	How periglacial processes drive rockfall and erode alpine rockwalls – D. Draebing
12.45-14.15	Lunch
14.15-15.00	Navigating the Challenges of Fieldwork in Arctic Areas – J. Boike
15.00-15.45	How to write a permafrost paper (for beginners) – B. Wild (online)
15.45-16.15	Coffee break
16. 15-17.15	Ice breaker activity
19.30	Dinner party – The Nordic, Camí de L'Antiga Farinera, 3, 17520 Puigcerdà

THE SPEAKERS

Hugues Lantuit

Growing old in permafrost research

Permafrost research has changed considerably over the past twenty years. The sheer amount of papers, students and projects related to frozen ground has exploded, leading to a shift in the permafrost research landscape. Early career scientists have been instrumental in driving that change, helped by inspiring mentors in the permafrost community. In this presentation, we reflect on how permafrost research grows, changes, moves forward and collides with established paradigms and networks, showing that the schism between youth and old age is maybe not what it seems.



Hugues Lantuit started his studies in France (Université Paris 7) and Canada (McGill University) before completing a Ph.D. in geosciences at the University of Potsdam in Germany. Subsequently, he successfully applied for funding through the Helmholtz Young Investigator Groups program and is now leader of the Arctic coastal erosion research group at the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI) and professor for geomorphology of polar coasts at the University of Potsdam. He has led many expeditions to the Arctic and has coordinated several large-scale projects related to permafrost thaw and the vulnerability of the Arctic coast, including the H2020 project Nunataryuk. He is a keen mentor of early career scientists and is co-founder of two large networks (PYRN and APECS) that bring together a total of more than 5000 young researchers in the polar science community.

Claire Treat

Permafrost Carbon Feedbacks: Progress on defusing the permafrost carbon bomb and future opportunities

The permafrost region is an important stock of soil carbon globally, storing an estimated 1014-1035 Pg Carbon. With climate warming, changes in air temperature and snowpack can lead to permafrost thaw, which renders this formerly frozen carbon stock vulnerable to decomposition and release to the atmosphere either as CO₂ or and methane, another potent greenhouse gas, which can enhance warming and permafrost thaw. In my seminar, I will discuss advances in understanding the magnitude of the potential permafrost carbon feedback, opportunities to and key open questions, and the importance of research networks, open research data, and data synthesis in addressing important science questions.



Claire Treat is the Young Research Group Leader for Permafrost Region Greenhouse gas fluxes at the Alfred Wegener Institute Helmholtz Center for Polar and Marine Research (AWI) since 2020. Her research focuses on the response of greenhouse gas fluxes from northern ecosystems to environmental changes resulting from factors such as climate warming, permafrost thaw, longer duration of soil thaw, and interannual variability. In 2019, Treat received an ERC Starting Grant for her project “The role of non-growing season processes in the methane and nitrous oxide budgets in pristine northern ecosystems (FluxWIN).” She has led several working groups in international research networks including the Permafrost Carbon Network and Carbon in Peatlands Network. She has also given invited talks at leading international conferences and given seminars at top-ranked universities and research institutes in the U.S. and Europe. Treat earned her PhD in 2014 from the University of New Hampshire, USA. Prior to joining AWI, she worked as a postdoctoral researcher in Finland, Alaska, and New Hampshire, USA. Her field work takes her to Finland and Alaska, where she spends lots of time in wetlands and tundra. She lives in Potsdam, Germany with her wife and dog and enjoys skiing and badminton.

McKenzie Kuhn

Boreal-Arctic Aquatic Methane Emissions: current estimates and future research directions

In this talk, I provide a biogeochemical perspective on the effects of climate change on Arctic freshwaters across a range of spatial scales and methodological approaches. Using a variety of field techniques, data synthesis, and statistical modeling, I evaluate the impacts of warming and permafrost thaw the Arctic-boreal methane cycle. Methane, a potent greenhouse gas, is naturally released from wetlands and lakes globally. As the north warms at four times the rate of the rest of the world, Arctic methane emissions are expected to increase due to “positive natural feedback loops.” Through these positive feedback loops, warmer temperatures accelerate activity of methane-producing microbes which leads to more methane emissions, resulting in even warmer temperatures. However, our ability to predict future changes in natural Arctic methane emissions and resulting warming temperatures depends on our understanding of the current magnitude of methane emissions- which remains highly unconstrained. In this talk, I use field-based studies and circumpolar data synthesis, to work towards constraining northern methane emissions before exploring the sensitivity of methane emissions to climate change and future research directions.



Dr. McKenzie Kuhn is an NSF Postdoctoral fellow at the University of New Hampshire and a lead mentor for the EMERGE Research Experience for Undergraduates (REU) in northern Sweden. She is interested in improving our current estimates of greenhouse gas emissions from natural ecosystems across the circumpolar region and wants to understand how these ecosystems react to climate change. McKenzie started her Arctic science journey in Eastern Siberia as an undergraduate participant in Woodwell Climate Center’s Polaris project. She has since worked in Sweden, Greenland, Alaska, and most recently in Canada where she completed her PhD at the University of Alberta in 2021. McKenzie’s research uses a variety of field-based approaches, empirical models, and GIS tools. She is particularly interested in carbon cycling in Arctic freshwaters and loves every excuse to use a kayak to conduct her research.

Daniel Draebing

How periglacial processes drive rockfall and erode alpine rockwalls

Rockfall processes are hazardous processes and shape high alpine rockwalls. Periglacial processes including frost cracking and permafrost thaw are assumed to be major drivers of rockfall activity by preparing and/or triggering rockfall. In the seminar, we will review periglacial processes in alpine rockwalls, model periglacial processes and compare model results to measurements of rockfall activity and erosion to re-assess the role of periglacial processes in hazard generation and landscape evolution.



Daniel received a Diploma (2009) and PhD (2014) in Geography at University of Bonn. He worked as researcher at Technical University of Munich and lecturer in Geomorphology at University of Bayreuth. Since 2023, he is Assistant Professor in Natural Hazards at Utrecht University. His research focusses on rock permafrost, frost weathering and alpine landscapes.

Julia Boike

Navigating the Challenges of Fieldwork in Arctic Areas

I have worked in the Arctic since 1991, exploring experimentally areas in Siberia, Svalbard, Alaska, and Canada. This work has presented numerous challenges, including logistical, scientific, and personal obstacles. Despite the challenges, my work has been rewarding on many levels, scientifically and personally. In my presentation, I aim to share my personal experiences working in the Arctic, highlighting the typical challenges encountered in the areas of logistics, scientific research, and personal well-being. Drawing from my past experiences, I will offer some practical ideas and guidelines for researchers and scientists planning to work in the Arctic.



Dr. Julia Boike is a permafrost scientist. With over 25 years of experience, her primary focus is on the hydrologic and thermal processes of permafrost and energy and water exchange between permafrost and the atmosphere. Dr. Boike's passion for the multidisciplinary science of permafrost takes her to the remote Arctic field sites in northern Canada, Siberia, and Svalbard every year. She is a group leader at the Alfred Wegener Institute for Polar and Marine Research in Potsdam, Germany, and a professor at the Humboldt University in Berlin.

Birgit Wild

How to write a permafrost paper (for beginners)

This seminar will focus on how to write a successful paper on permafrost-related topics, targeting early career scientists. We will talk about the importance of knowing the strengths and weaknesses of your study, connecting it to large research questions, how to reach the right target audience, and the pros and cons of different journals for different studies.



Birgit Wild is Assistant Professor at Stockholm University. She finished her PhD in biology at the University of Vienna in 2014, and then moved to Sweden for post doc positions at the University of Gothenburg and Stockholm University, where she now holds a tenure track position since 2020. Birgit's research is motivated by the importance of the Arctic for the global greenhouse gas balance and aims to provide systems understanding and quantitative data on carbon and nutrient cycles to improve projections. To that end, Birgit's work combines field observations from remote areas, experimental, analytical and modelling tools. Current research projects focus on the impact of plant- soil interactions on soil carbon and nitrogen cycling, and consequently the Arctic CO₂ budget (incl. ERC Starting Grant PRIMETIME), nitrogen cycling, N₂O dynamics and acidification of the Siberian Arctic Ocean and the impact of land-derived carbon and nitrogen.

THE ORGANISING COMMITTEE

Costanza Morino

Costanza is a research fellow at the University of Padua (Italy). She has previously worked as postdoc at the CNRS, Laboratoire EDYTEM (France) and at the Université de Nantes (France), after obtaining her Ph.D. at the Open University (UK). She uses field and geospatial quantitative analysis to study the impact of permafrost degradation on the morphology and dynamic of mass wasting processes in Arctic, sub-arctic and mountain environments. She is a PYRN member since ICOP 2016 and has served as part of the PYRN ExCom in 2020-2022.

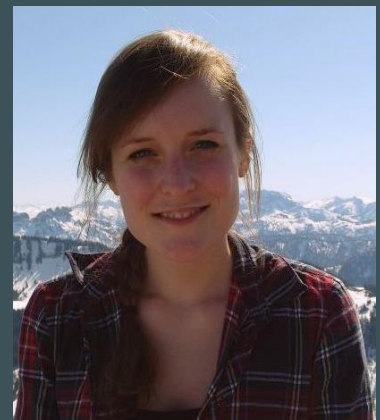


Adam Kirkwood

Adam is a Ph.D. Candidate in Geography at Carleton University, in Ottawa, Ontario, Canada. He works in the sub-arctic Hudson Bay Lowlands studying the effects of landscape change and permafrost thaw on mercury storage and methylation by microbial communities. Adam has been working in the Hudson Bay Lowlands since 2017, and enjoys any opportunity to work in the Arctic or sub-Arctic. Adam is the past vice-president of PYRN, and currently serves on the PYRN Council helping to coordinate events such as the EUCOP PYRN-IPA workshop. He looks forward to meeting PYRN members at the EUCOP conference and workshop, so don't hesitate to come say hello!

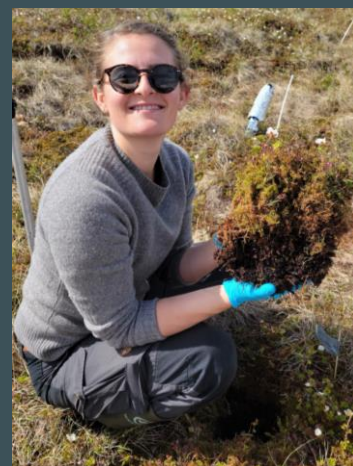
Juditha Aga

Juditha studied at the University of Heidelberg/ Germany (Bachelor in Geosciences) and at the Technical University of Munich/ Germany (Master in Engineering and Hydrogeology), before starting her PhD at the Department of Geosciences at the University of Oslo in 2019. Her research interest is permafrost modelling, with a focus on the thermal regime of slopes and rock walls, as well as soil mechanical aspects such as thaw consolidation and stability of slopes. Her fieldwork area is Svalbard, where she conducted several field campaigns in both winter and summer to analyze the permafrost thermal regime. Juditha joined PYRN in 2019 and was part of the PYRN ExCom in 2020-2022. During her term, all activities of PYRN had to be online, but now she is looking forward to meeting the PYRN members finally in person at the EUCOP.



Charlotte Haugk

Charlotte is a PhD student at Department of Environmental Science (ACES) at Stockholm University since 2020. Her studies focus on the release of mercury from thawing permafrost. More specifically how and to what extent mercury is accumulated and mobilized and transported to the atmosphere and downstream systems with a warming climate. Her fieldwork mainly focuses on northern Sweden, Norway and Finland. Her interest for permafrost science was initially sparked when attending a permafrost field course at UNiS in Svalbard and she has been passionate about it ever since. She did her master's thesis at AWI in Potsdam and is especially interested in outreach and science communication. Charlotte was part of the PYRN ExCom 2020-22 and is now the National Representative for Sweden.



Emma Lathrop

Emma earned a B.S. in Environmental Biology from Montana State University. Afterwards, she spent three years working at Los Alamos National Laboratory, on the Next Generation Ecosystem Experiments- Arctic program. Her work often took her to Nome, Alaska and she fell in love with the northern latitudes, a place experiencing rapid change. Emma is now a PhD student at Northern Arizona University where she studies the effects of permafrost thaw on Arctic ecosystem carbon cycling. In addition to her role as the PYRN representative to the US Permafrost Association's board of directors, she is the PYRN president for the 2022-2024 executive committee.

Emma is excited to lead more workshops and support more young researchers in her time on the executive committee.

Denis Frolov

Denis Frolov is a research fellow at Faculty of Geography, Lomonosov Moscow State University. His research interests include snow cover and climatic spatial and time alterations as well as regularities of snow cover formation and the processes of heat and mass transport in snow cover and on the boundary with ground and within the ground while ground freezing process. Does laboratory work and exercises in the faculties cold room and on the facilities meteorological observation site. Participated in expeditions to Caucasus, New Siberian islands and other parts of Russian Arctic.



THE SPONSORS

The PYRN Workshop is made possible through the financial and in-kind support of our sponsors: International Permafrost Association, NUNATARYUK project, Swiss Polar Institute, International Association of Geomorphologists.



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