Permafrost Coastal Systems Network (PerCS-Net)

The Permafrost Coastal Systems Network will accelerate the process of scientific discovery, facilitate public access to scientific data, and promote convergence through an international, transdisciplinary network focused on science, engineering, and societal issues associated with permafrost-affected coasts and communities in the Arctic.

February 2020

A Successful AGU Fall Meeting

PerCS-Net members co-organized a well-attended set of presentations on Monday, 9 December 2019, during an oral session with 7 presentations and a poster session with 18 presentations. Featured among the oral presentations, was an early career researcher Alisa Baranskaya from Moscow State University and supported by PerCS-Net, who presented on coastal dynamics in the Kara Sea. Featured among the poster presentations, was an overview poster on the recently funded international network of networks that was co-presented by PerCS-Net members as well as 9 other posters contributing to the broader objectives of PerCS-Net. In addition, Matthias Fuchs from the Alfred Wegener Institute and also supported by PerCS-Net to participate in network activities at AGU, presented a first pan-Arctic deltaic carbon and nitrogen stocks assessment at the 9th Annual Permafrost Carbon Network meeting and during a session on river deltas on Wednesday afternoon. Project co-PI Louise Farquharson also participated in a panel session where she discussed how projects such as PerCS-Net can contribute towards science diplomacy.

We also held a 3-hour PerCS-Net kick-off meeting on Wednesday, 11 December 2019. During the first hour, nearly 40 people gathered at the ARCUS presentation rooms in Hotel Nikko to discuss the foundation for the recently awarded NSF AccelNet project and to provide an opportunity for various network members to introduce themselves and express their interest in being an active PerCS-Net member. We had representatives in attendance from several national and international universities and research institutes as well as several national, federal agency representatives. The next two hours were spent at SPIN San Francisco where 50 people gathered to further discuss network activities, locate field sites on a map, and provide lightning talks about ongoing research focused on coastal permafrost systems.
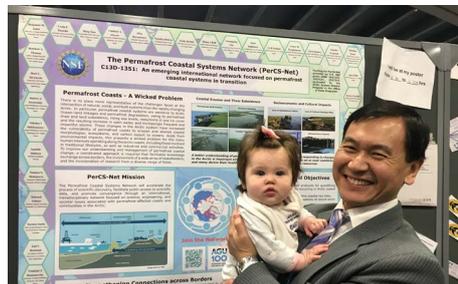
Ming Xiao (Penn State University) and Lillian Nola Jones presenting the PerCS-Net poster at AGU.

PerCS-Net member introductions at the ARCUS room meeting during AGU week.

Upcoming Events

PerCS-Net will be involved with presentations and organized sessions at several upcoming international conferences:

- European Geophysical Union Meeting in Austria in May 2020

- 10th International Congress of Arctic Social Sciences in Russia in June 2020

- 12th International Conference on Permafrost in China in June 2020

- 16th International Circumpolar Remote Sensing Symposium in Fairbanks in September 2020

Bruce Forbes (Finland), Alisa Baranskaya (Russia), Nataliya Belova (Russia), and Mark Bennett (US) networking at the PerCS-Net meeting during AGU week.

Currently, PerCS-Net includes 151 members from 21 countries, with more than half of the network consisting of early career researchers! Please help us continue to bring together the international coastal permafrost community by providing material for future quarterly newsletters and by spreading the word through your own networks.

Vision Statement

PerCS-Net envisions building:

A sustainable, pan-Arctic permafrost coastal observatory network providing coordinated and timely information to researchers, managers, indigenous stakeholders, and the general public

A transdisciplinary research network that fosters linkages in order to amplify the broader impacts of each individual network and maintain a circumpolar alliance for Arctic coastal community information exchange

An international community that fosters and empowers the next generation of students, early-career researchers, and indigenous communities faced with the known and unknown challenges of the future Arctic System.

New Network Member Publications

Gibbs, A.E., Snyder, A.G., and Richmond, B.M., 2019, National assessment of shoreline change—Historical shoreline change along the north coast of Alaska, Icy Cape to Cape Prince of Wales: U.S. Geological Survey Open-File Report 2019–1146, 52 p., https://doi.org/10.3133/ofr20191146.

Lim, M., Strzelecki, M.C., Kasprzak, M., Swirad, Z.M., Webster, C., Woodward, J. and Gjelten, H., 2020. Arctic rock coast responses under a changing climate. Remote sensing of environment, 236, p.111500.

Piliouras, A. and Rowland, J.C., 2020. Arctic river delta morphologic variability and implications for riverine fluxes to the coast. Journal of Geophysical Research: Earth Surface, 125(1), p.e2019JF005250.

Sinitsyn, A.O., Guegan, E., Shabanova, N., Kokin, O. and Ogorodov, S., 2020. Fifty four years of coastal erosion and hydrometeorological parameters in the Varandey region, Barents Sea. Coastal Engineering, 157, p.103610.

New Coastal Permafrost Research Projects

NSF NNA Track 1: Landscape evolution and adapting to change in ice-rich permafrost systems (PI Walker, September 2019 to August 2024)

NSF NNA Track 1: Collaborative Research: Resilience and adaptation to the effects of permafrost degradation induced coastal erosion (PI Xiao, September 2019 to August 2024)

NSF NNA Track 1: Pursuing Opportunities for Long-term Arctic Resilience for Infrastructure and Society (POLARIS) (PI Chi, January 2020 to December 2023)

NSF NNA Track 1: Collaborative Research: The Permafrost Discovery Gateway: Navigating the new Arctic tundra through Big Data, artificial intelligence, and cyberinfrastructure (PI Liljedahl, November 2019 to October 2023)

DOE InterFACE: Understanding Earth System Change across Arctic Coastal Environments (PI Rowland, September 2019 to August 2022)

The Perks of PerCS-Net

PerCS-Net is providing travel support to Roberta Tuurraq Glenn, an Iñupiaq woman from Utqiaġvik and a graduate student in the Arctic Coastal Geosciences Lab at UAF, to attend the upcoming short course on "Arctic Coastal Adaptation - Capacity building and knowledge exchange across borders" at the Abisko Scientific Research Station (Abisko, Sweden) from 21 - 30 April 2020. The course is being organized by the EU Horizon 2020-funded project Nunataryuk in cooperation with the Association of Polar Early Career Scientists (APECS) and the Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections (T-MOSAiC). The field school aims to connect indigenous and non-indigenous early career researchers (ECRs) from different scientific disciplines with international scientific experts as well as local experts and stakeholders from Arctic coastal communities to share state-of-the-art and Traditional Knowledge and best practices for adaptation strategies in the Arctic coastal areas to respond to permafrost thaw. The course will provide valuable training and networking opportunities that will amplify Roberta's ongoing thesis research focused on an erosion study in collaboration with the Village of Wainwright on the North Slope of Alaska.