

PROJECT DETAILS

National Science Foundation
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Principal Investigator
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UAF Research Team
Geophysical Institute (GI)
Institute of Arctic Biology (IAB)
Institute of Northern
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International Arctic Research
Center (IARC)
Water and Environmental
Center (WERC)

Other Researchers
Alaska Division of Geological &
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Cold Climate Housing
Research Center (CCHRC)
Woodwell Climate Research
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Project Partners
Native Village of Point Lay
Cully Corporaton
Kali School
NSB Dept. of Planning &
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Housing Authority (TNHA)

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portals/nna-irps](http://arcticdata.io/catalog/portals/nna-irps)
 @permafrostpeople



NAVIGATING THE NEW ARTIC

Landscape Evolution & Adapting to Change in Ice-rich Permafrost Systems

Ice-rich permafrost is the most susceptible element of Arctic landscapes to climate warming. Nearly 50% of the Arctic has ice-rich permafrost. Along Alaska's northern coast up to 80% of the top 10-15 feet of land is ice.

Like the removal of a keystone species in ecology, the widespread thawing of ice-rich permafrost affects the entire Arctic ecosystem, making the ground unstable to build on, and putting communities and infrastructure at risk.

This National Science Foundations' Navigating the New Arctic project will increase our understanding of ice-rich permafrost and its intricate connection to the human, built and natural environments in Alaska and across the Arctic.

STUDY AREAS: Point Lay and Prudhoe Bay, Alaska

LANDSCAPE EVOLUTION: How do changes in climate, snow, water, disturbance, and time influence the thawing or stabilization of ground ice? To learn, we will...

- Establish three new ice-rich permafrost observatories (IRPO) in roadside, natural, and village settings to study ground ice conditions and relationships with hydrology, vegetation and greenhouse-gas fluxes
- Measure and monitor changes in permafrost from air and space at multiple scales using remote sensing and data fusion techniques

ADAPTATIONS TO CHANGE: How can Arctic communities plan for and adapt to changes in these evolving permafrost landscapes? To learn more, we will...

- Work with the Point Lay community, school and housing authority to develop better solutions for housing foundations in areas of high risk for thaw subsidence
- Host a permafrost symposium in Point Lay with scientists and engineers from Alaska and Canada to develop better strategies for other critical infrastructure
- Include community members, local teachers and students in research activities
- Develop and share best practices for road construction in ice-rich permafrost



Meet Our Research Team



Skip Walker, PhD, UAF
Principal Investigator (PI),
Vegetation, education



Amy Breen, PhD, UAF
Vegetation, education



Anja Kade, PhD, UAF
Vegetation, trace gas fluxes



Emily Watson-Cook, UAF
Graduate student,
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**Vlad Romanovsky, PhD
UAF, Co-PI, Permafrost geo-
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Permafrost modeling



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Ben Jones, PhD, UAF
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Helena Bergstedt, PhD, UAF
Post-doctoral fellow,
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Jana Peirce, UAF IAB
Project coordinator, outreach,
permafrost symposium



Billy Connor, PE, UAF
Roads, village infrastructure,
permafrost symposium



Vanessa Stevens, CCHRC
CCHRC project manager,
Village housing, education



Jack Hebert, CCHRC
CCHRC founder, village
housing

NOT PICTURED: **Gary Kofinas, UAF, Co-PI** (social systems), **Martha Reynolds, UAF** (vegetation mapping, remote sensing), **UAF Students** (field/lab assistance), **Rest of CCHRC Team** (village housing, education), and **Community & Regional Partners:** Native Village of Point Lay, Cully Corporation, Kali School, NSB Planning & Community Development, TNHA