

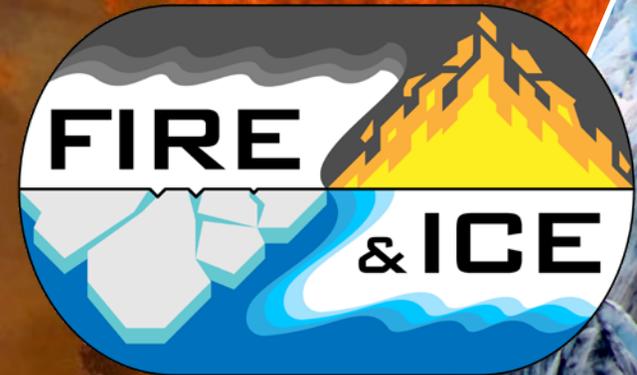


**“Fire & Ice: Navigating Variability in Boreal Wildfire Regimes and Subarctic Coastal Ecosystems”** is a five-year (2018-23) project to study climate-driven changes to fires in Alaska’s boreal forest, and to marine life in the glacially-influenced nearshore of the Gulf of Alaska. The research is being undertaken by Alaska NSF EPSCoR (Established Program to Stimulate Competitive Research) with funding from the National Science Foundation and the State of Alaska.

Fire & Ice researchers across the University of Alaska system employ remote sensing, fieldwork, laboratory experiments and modeling to examine these changes, and work with communities to generate knowledge about their potential impacts. The project is divided into three major components: A Boreal Fires research team, a Coastal Margins research team, and a Diversity, Education and Workforce Development (DEW) team.



**Get involved:** Fire & Ice offers a number of opportunities for researchers and students, including travel funding, seed grants for research projects, and positions for undergraduate and graduate student researchers. We also oversee a Visualization Space for meetings and other events and a Development Space featuring virtual reality and other visualization technology, both of which are available for use by researchers and the community.



[ua-epscor@alaska.edu](mailto:ua-epscor@alaska.edu)  
[www.alaska.edu/epscor](http://www.alaska.edu/epscor)

Alaska NSF EPSCoR  
PO Box 757010  
204 West Ridge Research Building  
University of Alaska Fairbanks  
Fairbanks, Alaska 99775-7010, USA  
(907) 474-6288



This material is based upon work supported by the National Science Foundation under award #OIA-1753748 and by the State of Alaska. UA is an AA/EO employer and educational institution and prohibits illegal discrimination against any individual: [www.alaska.edu/nondiscrimination](http://www.alaska.edu/nondiscrimination). Front panel glacier photo by Antti Nissinen CC BY 2.0.

Studying change in the  
boreal forest and the  
nearshore Gulf of Alaska





## Boreal Fires

**Boreal Fires** researchers use advanced remote sensing, computer modeling, fieldwork and surveys to study all aspects of fires in the boreal forest: from the climactic conditions that contribute to fires, to how fires spread and how severely they impact the landscape. They also study the economics of fire management in settled areas and the ways fires impact subsistence resources. Products of their research will include new techniques for evaluating fire risk; better methods of processing remote sensing data; improved fire spread models; online fire forecast tools; and outreach products for fire managers.

## Coastal Margins

**Coastal Margins** researchers are collecting detailed data in Lynn Canal (near Juneau) and Kachemak Bay (across from Homer) on how glacial retreat and other climate-related changes impact physical and chemical conditions and marine life. “Stream Teams” collect data in 10 different watersheds, while intertidal researchers study conditions and organisms at river mouths. Laboratory experiments on key species help indicate how they will respond to anticipated changes in climate, and surveys of fishers and agencies provide information on how Alaskans are responding to changes in marine resources.

## Diversity, Education, and Workforce Development

**The Diversity, Education and Workforce Development** team engages Alaskans of all ages in science learning activities related to changing ecosystems, and broadens Alaskan participation in science, technology, engineering and math (STEM) fields. The team focuses in particular on women, Alaska Natives, and first-generation college students. Major programs include afterschool K-12 lessons grounded in Fire & Ice science, experiential learning for high school girls, peer tutoring for University of Alaska students, and a study of STEM identities in first-generation university students.