

# FIRE AND ICE

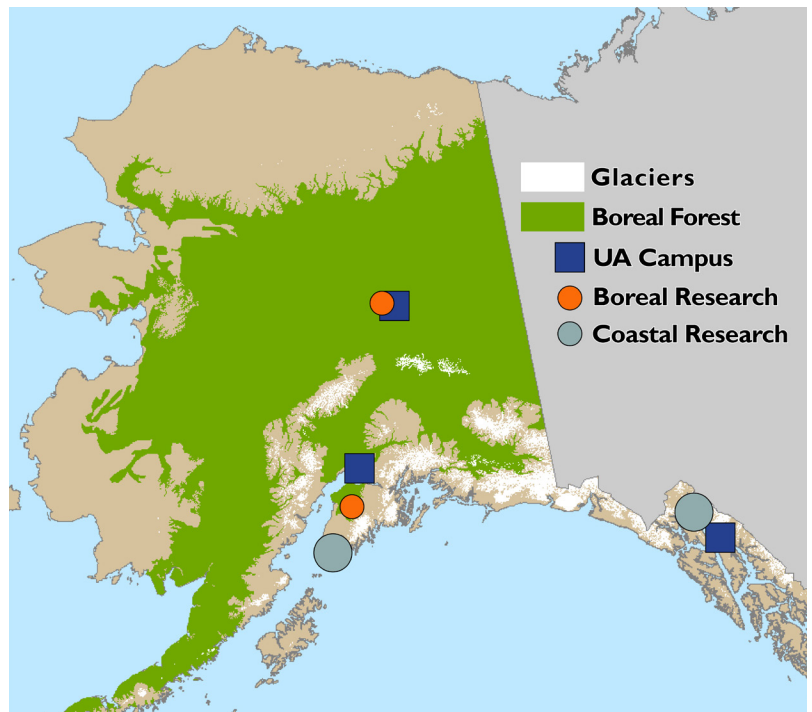
## NAVIGATING VARIABILITY IN BOREAL WILDFIRE REGIMES AND SUBARCTIC COASTAL ECOSYSTEMS

“Fire and Ice” is a 5-year (2018–23), \$20 million effort to study changes to fire risk and behavior in **Alaska’s boreal forest**, and changes to physical and chemical conditions impacting ecosystems and organisms in the nearshore **Gulf of Alaska**. Scientists across the University of Alaska (UA) will use remote sensing, fieldwork, lab experiments, and models to study these climate-driven changes to critical ecological systems.

A **Boreal Fires** team will identify large-scale climate factors impacting fire weather, and use advanced remote sensing to better map and measure fire fuels and active fire behavior. They’ll also conduct research into fire management in settled areas like the Kenai Peninsula, and into the ways fire impacts subsistence resources. Researchers will develop 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.

A **Coastal Margins** team will determine how climate change is altering the volume and character of materials that flow from land and rivers into the Gulf of Alaska, and how this affects communities of organisms in the nearshore. The team will study how large-scale ocean processes impact the nearshore marine environment, and establish how different levels of upstream glaciation can change characteristics of communities of nearshore organisms. They’ll determine how organisms’ physiological responses to physical conditions vary along different levels of glaciation, and study how fishing communities respond to changes in the availability of key marine species. Researchers will generate biological, physical and chemical data, as well as vulnerability assessments that will aid in managing resources.

A **Diversity, Education and Workforce Development** (DEW) team will involve more than 1,500 Alaskans in Fire and Ice activities, including K-12 out-of-school programs and teacher workshops; scientific expeditions for high-school girls; and UA mentoring, courses and training. DEW will also conduct research into formation of a science identity in first-generation college students, who will be a focus of F&I diversity efforts, along with women and Alaska Natives.



Map of glaciers and forests, major Fire and Ice research sites and the three main University of Alaska campuses.



Fire and Ice is a project of **Alaska NSF EPSCoR** (National Science Foundation Established Program to Stimulate Competitive Research). EPSCoR builds research capacity in states and territories that have historically received below-average amounts of NSF funding. For more information visit [www.alaska.edu/epscor](http://www.alaska.edu/epscor).

# YOUR OUTPUT NEEDED

## FIRE AND ICE SOCIAL MEDIA

**As we all know**, if it didn't show up on Facebook/Twitter/Instagram, it didn't happen. Which is why we're encouraging all of you to help us share your doings through social media.

**Who:** You! We welcome content from anyone associated with the project - undergrads, grad students, faculty, staff, techs, educators. If it has to do with EPSCoR and you want the world to know about it, send it our way. In fact, if you did something amazing that has nothing to do with EPSCoR, let us know about that too.

**What:** Photos and videos, especially of people doing research and outreach. Brief descriptions of your research and findings. Links: to blog posts, websites, news coverage, articles, research posters, anything related to the project.

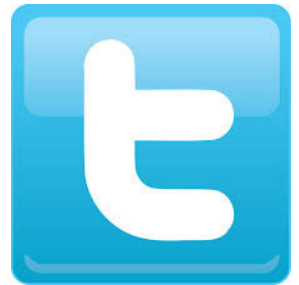
**When:** Anytime!

**Where:** EPSCoR currently has a [website](#), [Facebook page](#), [Twitter feed](#), [YouTube page](#), [Instagram account](#), and [LinkedIn page](#).

**Why:** We're publicly funded, so it's important the public knows we're doing good work. But also, our research is important and this is a great way to let people know about our process and our discoveries. And the more we can show people the meticulous and important work we're doing in their backyards, the more credit they'll give research in general.

**How:** When you have material to share with us, send it to [tmoran3@alaska.edu](mailto:tmoran3@alaska.edu). If you have questions about formats, just email. If you want to contribute *en masse* let us know and we can discuss sharing straight to our feeds.

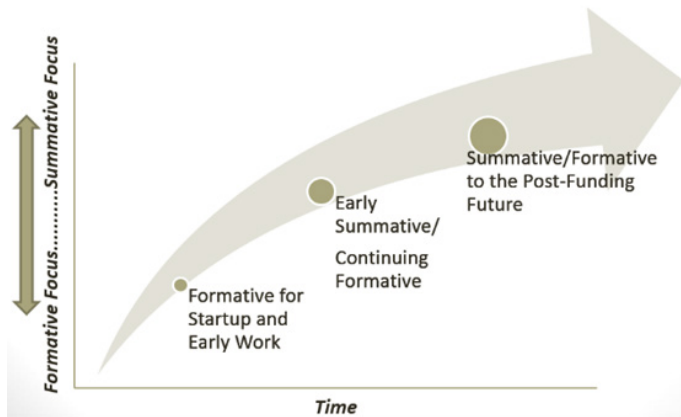
Thanks, and we look forward to working with you!



# YOUR INPUT NEEDED

## FIRE AND ICE EVALUATIONS AND REPORTING

It's likely that you'll be asked to provide information and input for Fire and Ice's **external evaluation** and **annual reporting**. Collecting accurate, timely and thorough data for both is critical to our success.



The external evaluation has two major functions (see figure to left). Early work will be **formative**: data will support annual recommendations for improvements. As Fire and Ice develops, the evaluation will become **summative**, capturing data to gauge success and to plan for future research.

Evaluators will track development of project leadership, research growth, collaborations on

research and in publishing, and other benchmarks. Some of the data we'll request for the evaluation (and for NSF reporting) will be basic information like demographics. But the evaluation also depends heavily on data about the nature of your participation, which is important to study team dynamics. We will gather this data in several ways:

We'll use **annual surveys** of students and/or faculty to collect data on team structure and change over time, team expectations and professional goals, student interactions, interactions with project partners, and productivity. We'll also ask social network questions to track team development and interactions.

We'll conduct **interviews** of selected participants to gather critical qualitative data and gain rich detail on project activities and outcomes.

And we will gather **publication data** from participants to analyze articles for co-authorship, subject and journal placement, impacts, and overall productivity.

### Answers the evaluation will address include:

- How integrated is the project team within and across components, disciplines, ranks, and institutions? Is this strengthening over time?
- How well are researchers and teams integrating knowledge?
- How productive are the research components? What role do early-career faculty and students have in this production?
- How have students benefited from participating in the project? Are they integrated in meaningful ways?
- How are workforce development activities building capacity and providing other benefits?
- Is the project developing strong collaboration teams for long-term sustainable research?
- Has the project helped to trigger institutional changes that may support ongoing workforce development and cross-institutional collaborative research?