



ESTABLISHED PROGRAM TO STIMULATE COMPETITIVE RESEARCH

Evaluating Alaska NSF EPSCoR: Year 1 Fire and Ice: Navigating Variability in Boreal Wildfire Regimes and Subarctic Coastal Ecosystems

October 4, 2019

CONSULTANTS

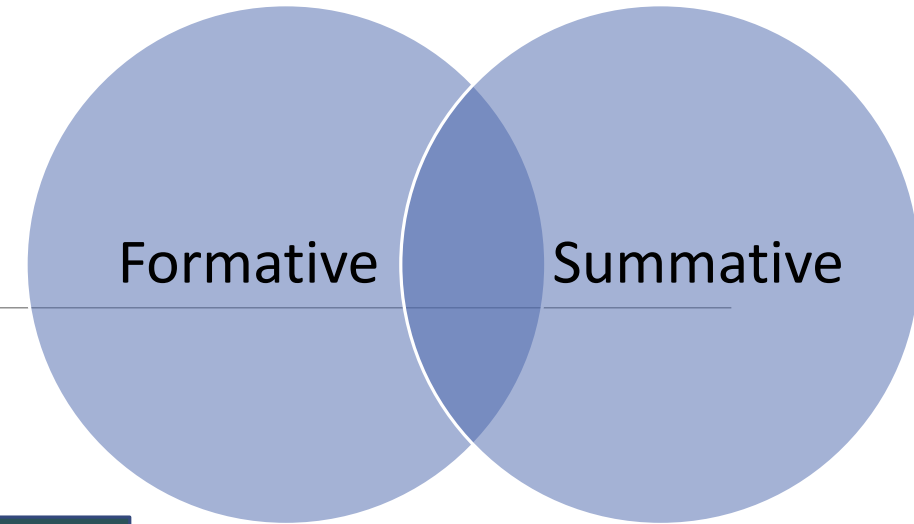
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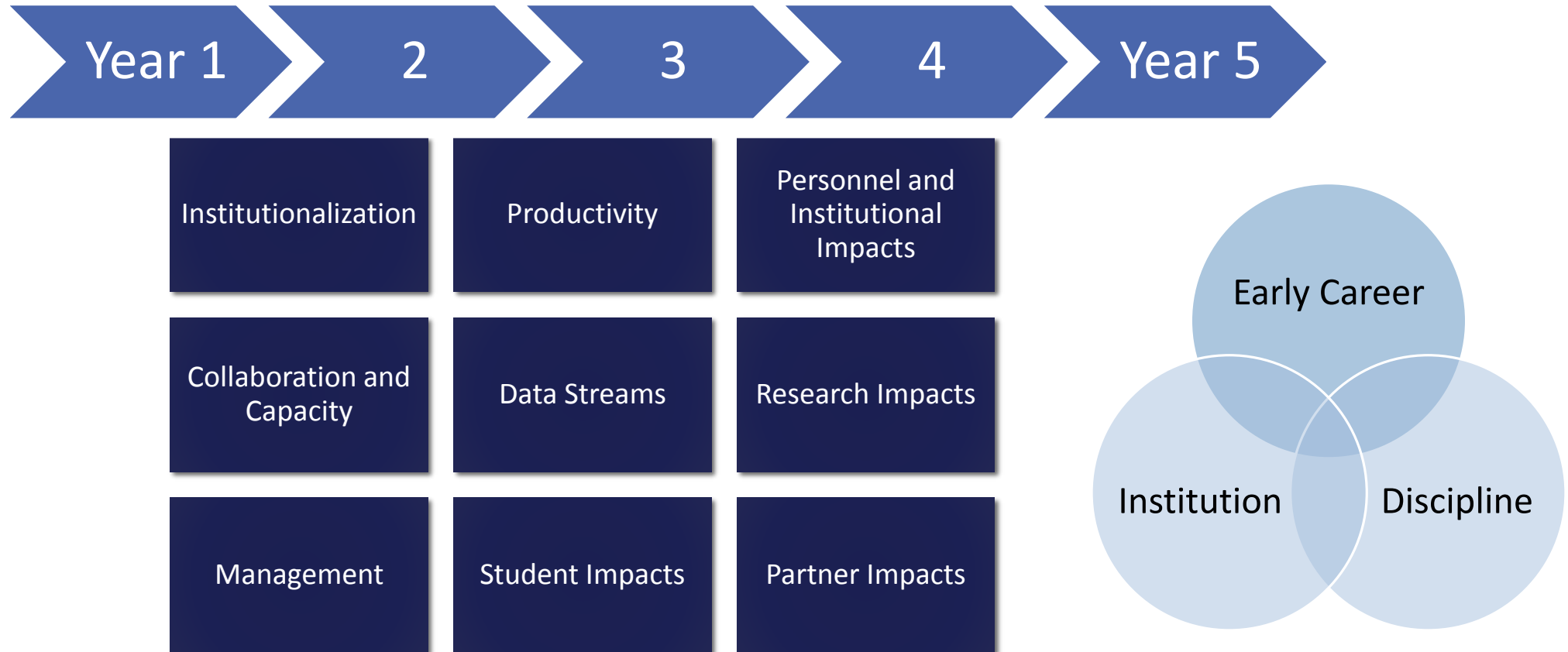
Scottsdale, AZ

Evaluation Purpose



The purpose of the external evaluation is to support the development and to assess outcomes of the Alaska EPSCoR *FIRE & ICE* project through formative and summative input across the five years of cooperative agreement. The focus addresses the different stages of the project, including project and team development, capacity development, and research/other outcomes.

Multi-Faceted Evaluation Focus: Formative and Summative



The purpose of the external evaluation is to support the development and to assess outcomes of the Alaska EPSCoR *Fire & Ice* project through formative and summative input across the five years of cooperative agreement.

Outline

1. Evaluation questions
2. Team Foundations and Development
3. Institutionalization/Project Development
4. Diversity, Education and Workforce
5. Team Collaboration
6. Early Productivity
7. Fire & Ice Management
8. Future Expectations and Plans

Year 1 Report

Focused on formative
assessment

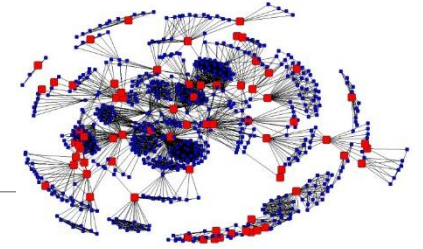
Year 1 Guiding Evaluation Questions:

- ***Communication and Understanding:*** How is Fire & Ice developing as a team? At this initial stage, to what extent do the Fire & Ice team members understand each other's expertise?
- ***Institutionalization:*** In the first year of the project, how is Alaska EPSCoR establishing processes and support to enable it to meet its objectives? To what extent is the project "on track"?
- ***Diversity, Education and Workforce:*** How is the team collaborated on diversity, education and workforce goals and activities?
- ***Early Collaboration:*** How is early collaboration developing on the Fire & Ice team?
- ***Productivity:*** What have been the early scientific and knowledge development outcomes of the collaborative activity of the *Fire & Ice* research (conference papers, grant proposals, publications)?
- ***Management:*** How effective is the communication system between management and the different research groups? How effective is management in guiding and supporting project activities? What do team members identify as ways for management to better support the team?
- ***Future expectations and plans:*** Looking forward, how will the team collaborate and produce?

How is Fire & Ice developing as a team?

Point: Communication and interaction are critical to team cohesion, shared understanding, etc. Understanding who to go to on a team fosters collaboration and inquiry. Early assessment of this interaction can aid project planning.

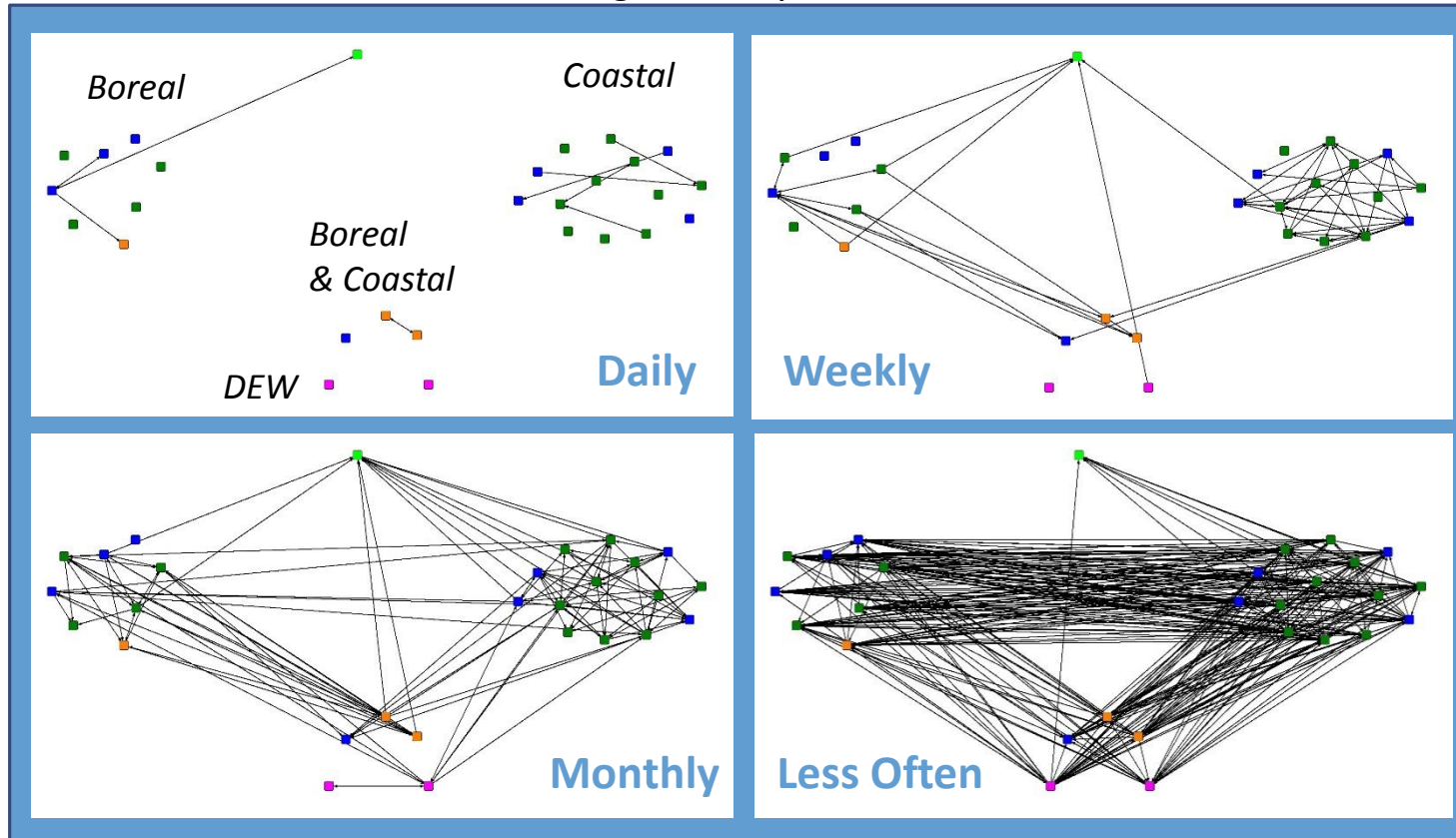
Team Interaction & Understanding



- Early collaborative engagement
- Communication frequency
- Understanding of team member expertise

How frequently have you communicated? (*full project team*)

Organized by Team



Project communication:

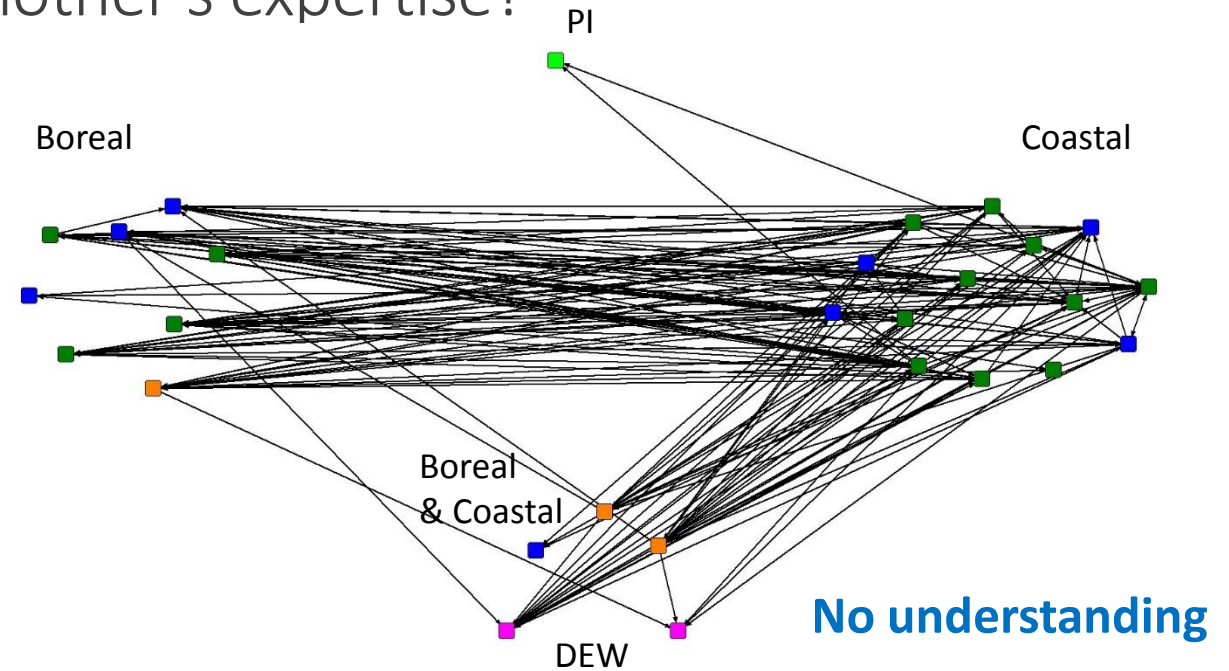
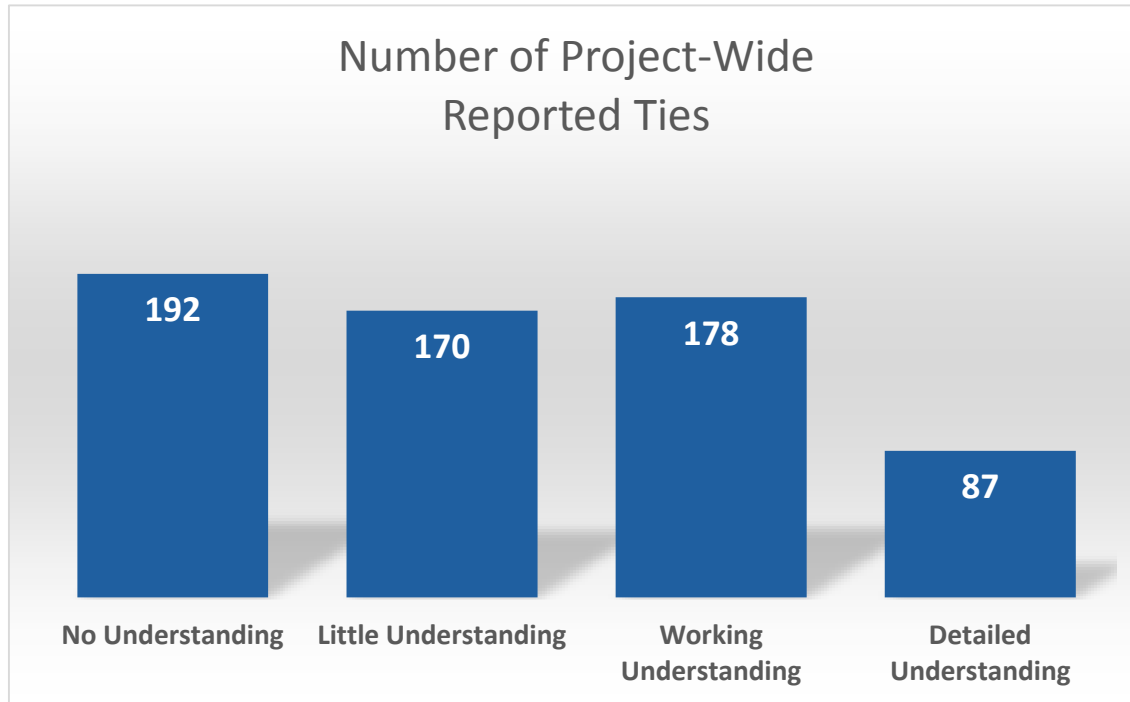
- Many on coastal team communicating on weekly basis; Boreal team members communicate less frequently.
- As expected, communication is mostly within teams and with individuals with shared affiliations.
- Communication in collaboration networks reflect normal project start-up phase.

Color key

Natural Sciences = Green
Physical Sciences = Blue
Social science = Orange
DEW = Pink
PI = Bright Green

➤ **PI included in networks, but not surveyed (network n=28)

How well do you know one another's expertise?



Understanding of expertise:

- Over 40% of all ties either a working understanding or a detailed understanding.
- Boreal and Coastal teams have good level of understanding of one another's expertise.
- As the project proceeds, gaps in understanding about expertise across the project should drop.

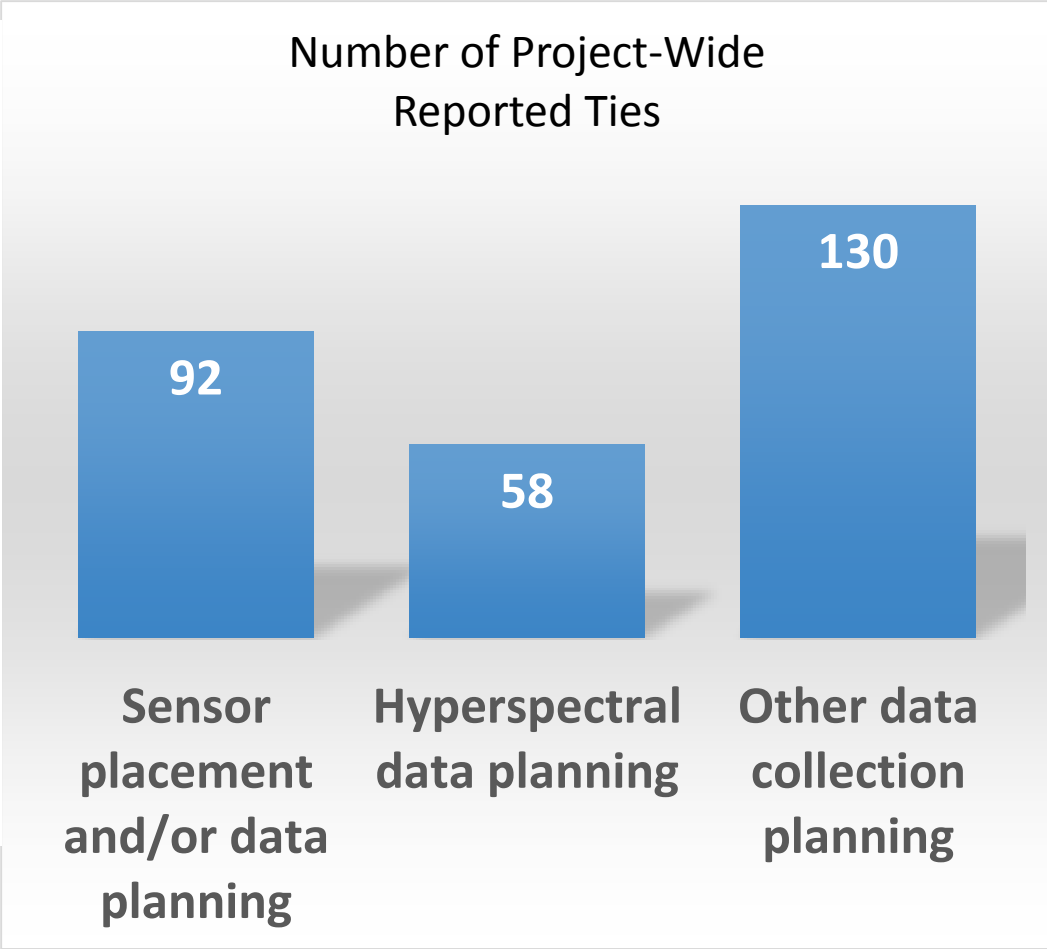
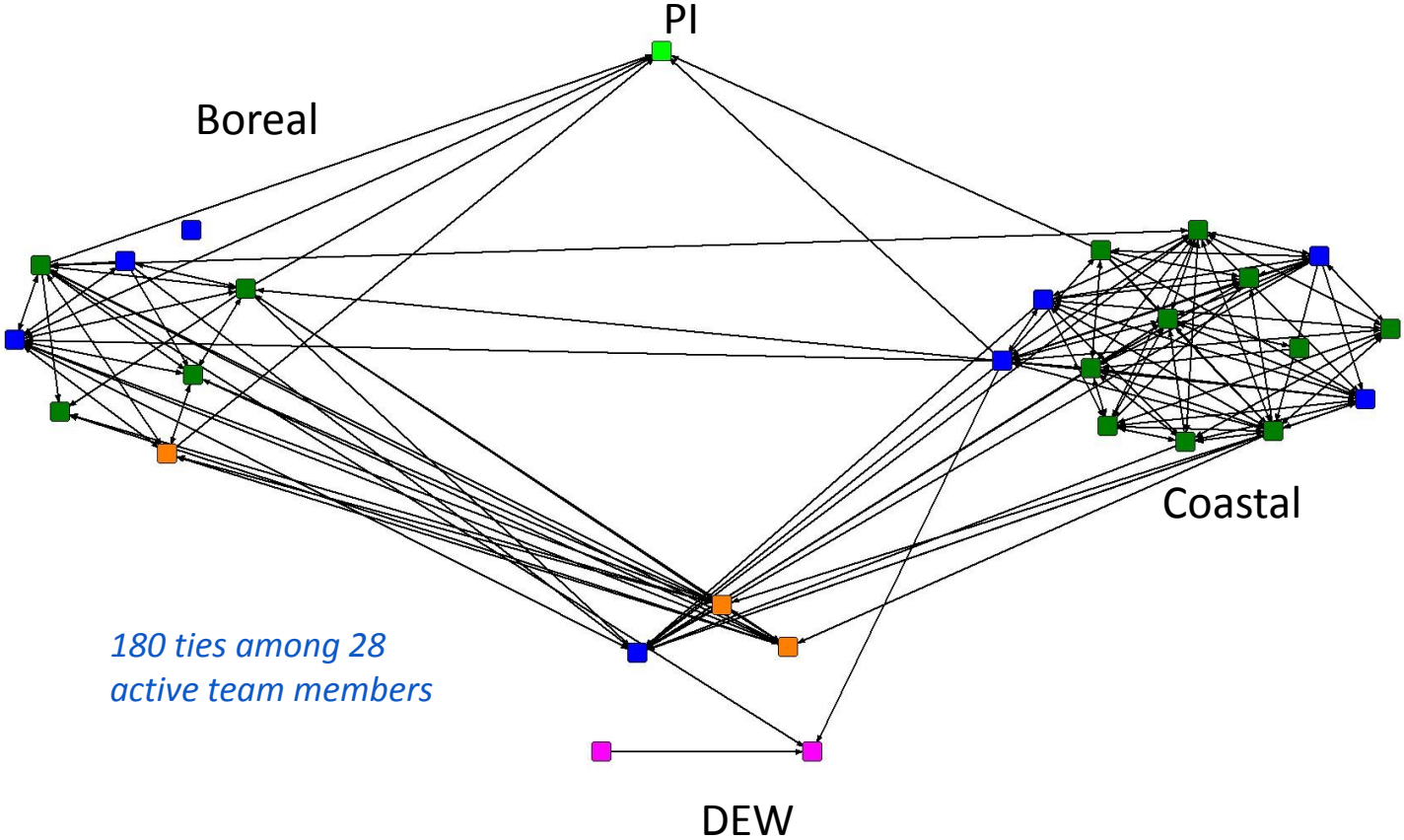
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In the first year of the project, how is Alaska EPSCoR establishing processes and support to enable it to meet its objectives?

Point: Team member views of project and team development, expectations, and progress are important for team culture and engagement.

Which types of **project coordination and implementation activities** did you work on during the last year with the following individuals?



Some concerns about F&I project understanding and communication

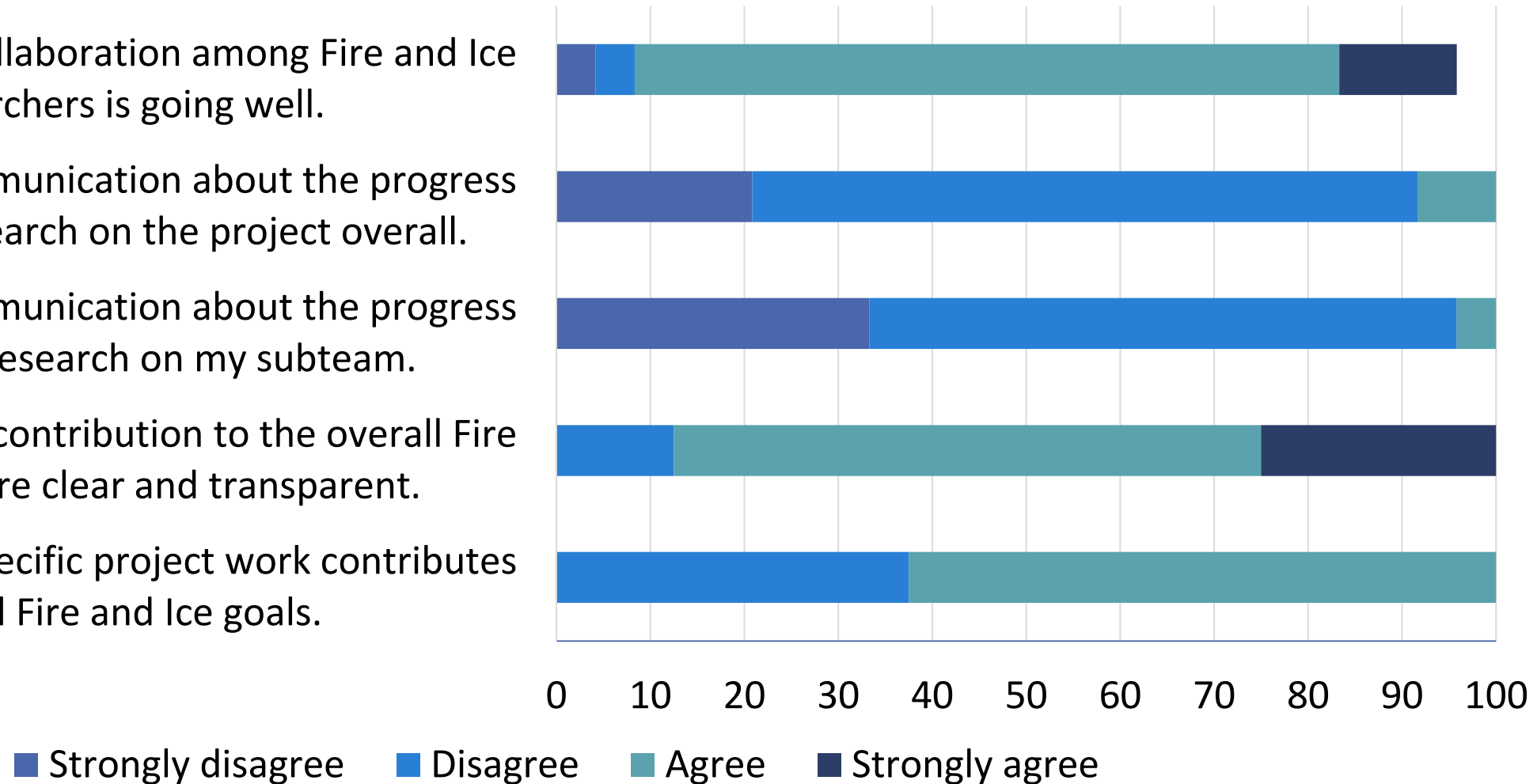
On the whole, collaboration among Fire and Ice researchers is going well.

There is not enough communication about the progress of the Fire and Ice research on the project overall.

There is not enough communication about the progress of the Fire and Ice research on my subteam.

Expectations about my contribution to the overall Fire and Ice research are clear and transparent.

I understand how my specific project work contributes to the overall Fire and Ice goals.



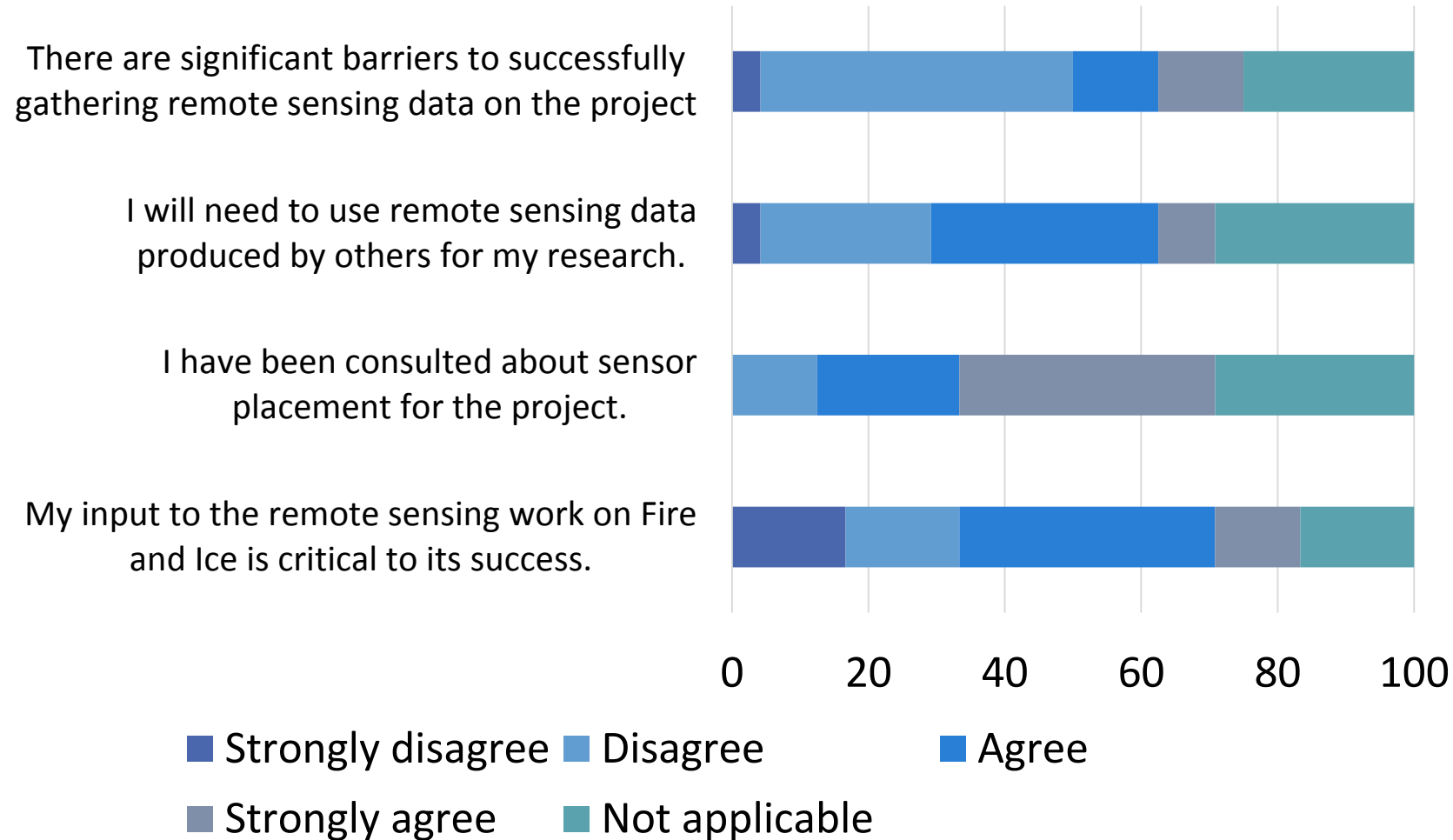
Fire & Ice teams are developing well



Team development:

- Most team members think that their team research is well coordinated and on track to complete their research objectives.
- All agree that their team is working well together and few believe they have not had enough meetings.

Team views about sensor data collection and use for F&I research



Data collection and use:

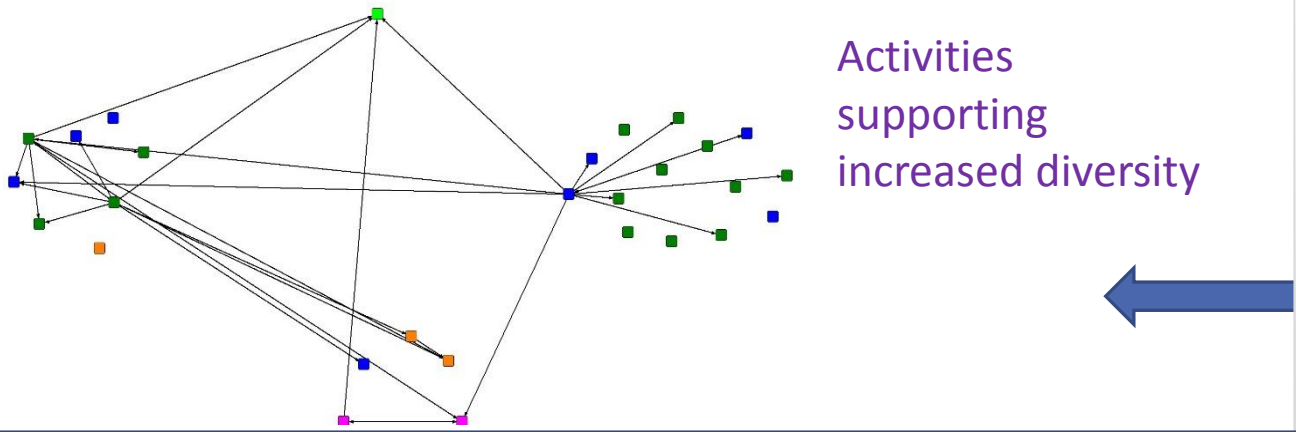
- About half agree that their input is important to the remote sensing work.
- Only about 40 percent of the team will need remote sensing data produced by others on the project.
- About 20 percent perceive barriers to gathering remote sensing data.
- Over half of the team have been consulted on sensor placement.
- For about a quarter of the F&I faculty issues related to remote sensing are not relevant.

How is the Fire & Ice team working together on Diversity, Education and Workforce?

Point: Because Diversity, Education and Workforce are important components of Fire & Ice, it is important to know more faculty engagement.

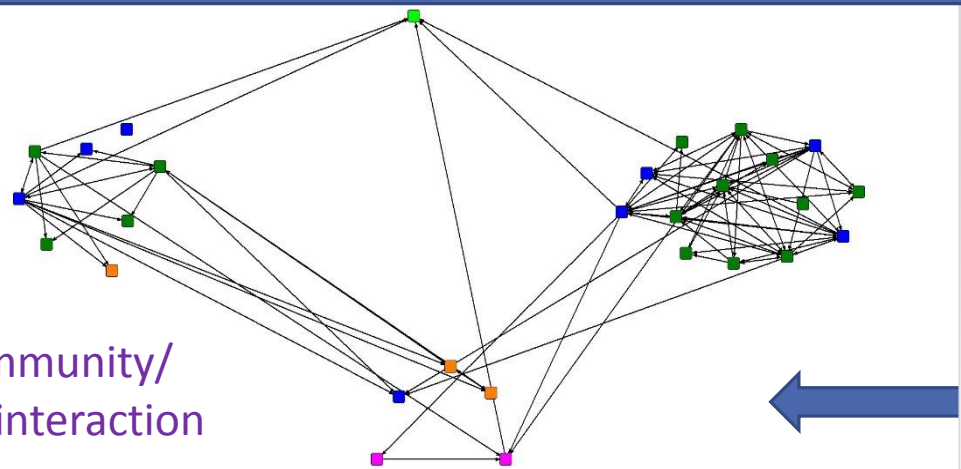
With which individuals did you work with on these **diversity, education and workforce activities**?

High engagement in planning stakeholder interaction, while more moderate activity to support increased diversity.



Activities supporting increased diversity

Number of Project-Wide Reported Ties	
developing and/or running indigenous workshops	2
other activities that support increased diversity	29



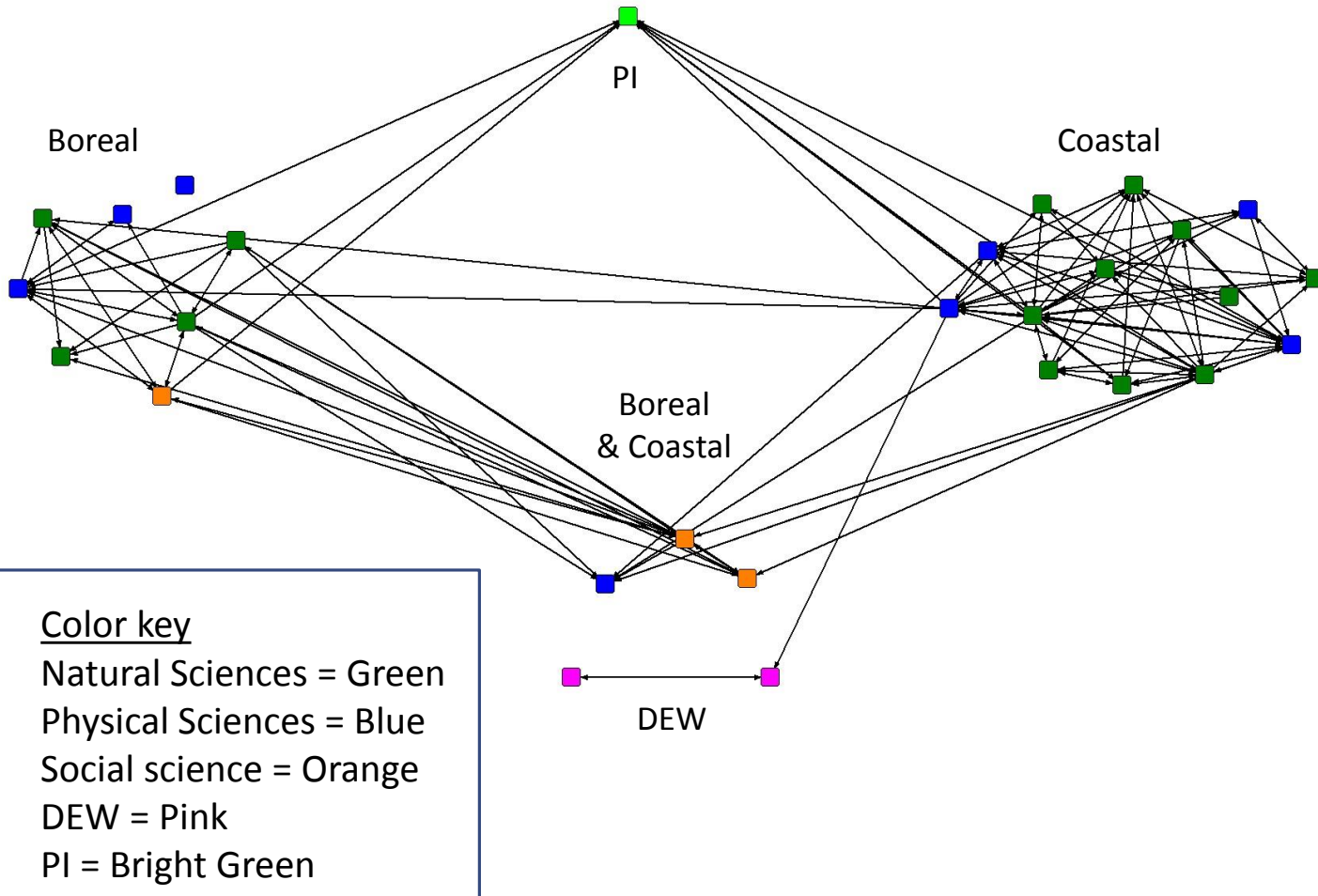
Planning community/stakeholder interaction

planning community/stakeholder interaction	92
mentoring	35
running workshops or classes	16
K-12 education	8

How well is collaboration developing on the Fire & Ice team? What early production can be observed on the Fire & Ice team?

Point: Observing early collaborative interaction can assist leadership understand project-wide collaboration on research and whether production activity is appropriate given Fire & Ice overall goals at this point in time.

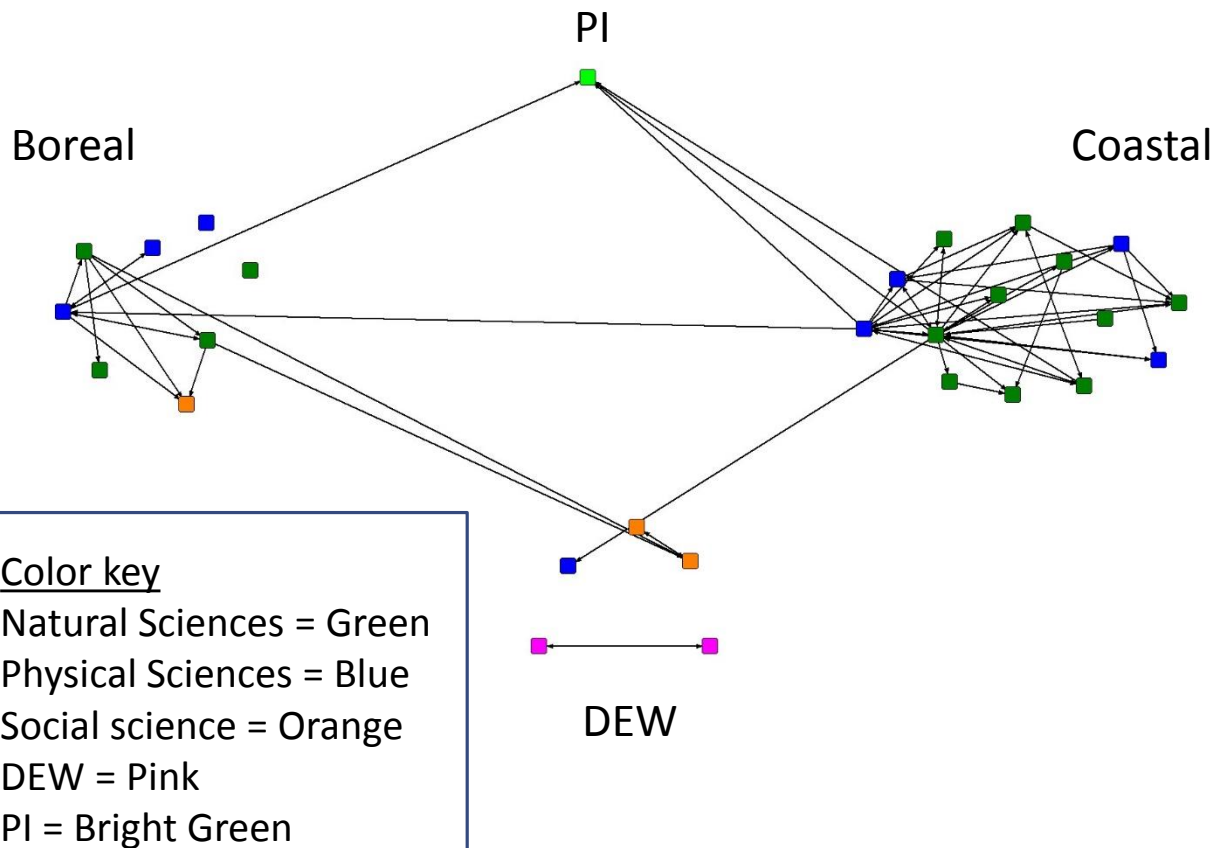
(In Year 1), with which of the following individuals have you collaborated with on the Alaska Fire & Ice project?



Collaboration:

- Includes: *Actively working on research together and any other teamwork designed to produce intellectual products, including a research grant proposal, working paper, academic conference paper or journal article.*
- Collaboration networks show active collaborative engagement in project start-up.
- On average, Fire & Ice researchers are connected to 7 other team members (28 individuals are connected by 133 ties).
- These interactions should be reflected in academic products in the next year.

For the researchers that you named, have you **collaborated** on any of the following during the last year? (Early production)



Number of Project-Wide Reported Ties

Submitted/presented conference presentation	44
Made a presentation on campus to a non F&I group	17
Submitted grant proposal	10
Initiated/drafted a manuscript	10
Submitted journal article	4

What did the Fire & Ice team produce in 2018-19: total and on EPSCoR?

	Total produced	Attributed to F&I
Peer reviewed journal articles (accepted or published)	76	1
Reviewed conference proceedings	22	3
Conference presentations	123	11
PI grants submitted, still pending	24	2
PI grants awarded	24	1
CoPI grants submitted, still pending	24	1
CoPI grants awarded	9	1
Contracts with industry	4	0
Contracts with government	3	1

How effectively does management guide and support project activities?

Point: Managing large projects is challenging. An early understanding of any possible issues will help future project structure and processes.

Fire & Ice management team staff are viewed positively

How helpful has the Alaska EPSCoR management team been with the following activities?

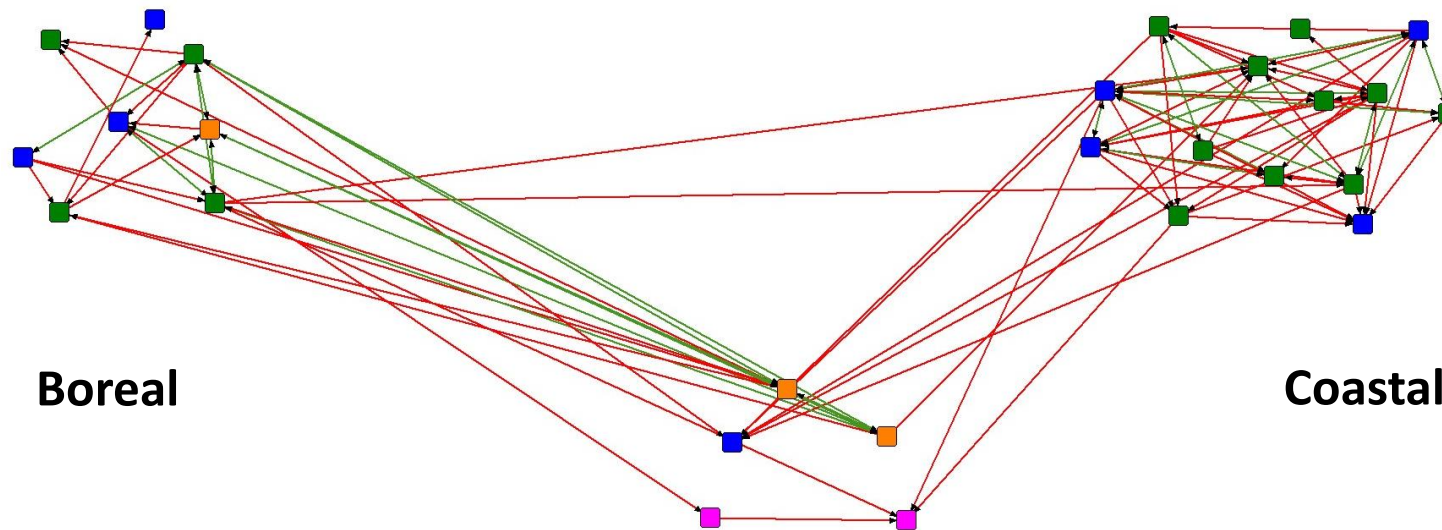


Looking forward, how does the team intend to collaborate and produce?

Point: Team member expectations for future collaborations can reveal level of team understanding and cohesion. Further, disciplinary differences also shape views of appropriate outlets.

“Now, looking forward to the coming year, with whom do you hope to collaborate in the coming year?”

Reciprocal interests in collaboration



Anticipated collaboration by team: Shared expectations.

- Expectations for collaboration are positive and demonstrate excitement about the Fire & Ice EPSCoR project.
- Should develop into more active research as the project moves ahead.

Where do Fire & Ice researchers expect to publish project work in their discipline? (56 journals named, some multiple times)

American Meteorological Society and AGU journals	Applied Geochemistry	Biogeochemistry	Biogeosciences	Bioone	Canadian Journal of Native Education	Coastal and Shelf Science	Comparative Biochemistry and Physiology
Continental Shelf Research	Earth Interactions	Ecological Applications	Ecological Economics	Ecology	Elementa Science of the Anthropocene	Engaged Scholar Journal	Environmental Biology of Fishes
ESA journals	Estuaries and Coasts	Estuarine	Fire	Geology	Geophysical Research Letters	Global Change Biology	Hydrological Processes
IEEE System	International Journal of Climatology	International Journal of Science Education	International Journal of Wildfire	International Journal of Climatology	Journal of American Indian Education	Journal of Environmental Economics and Policy	Journal of Experimental Marine Biology and Ecology
Journal of Fish Biology	Journal of Forest Economics	Journal of Geophysical Research - Biogeosciences	Journal of Geophysical Research: Oceans	Journal of Hydrology	Journal of Plankton Research	Journal of Shellfish Research.	Land Economics
Limnology and Oceanography	Marine and Coastal Fisheries	Marine Biology	Marine Ecology Progress Series	Journal of Experimental Marine Biology and Ecology	Marine Ecological Progress Series	Nature	Nature Climate Change
Nature Geoscience	Nature Geoscience	Ocean Science	Remote Sensing	Remote Sensing of Environment	The Cryosphere	Transactions of the American Fisheries Society	Water Resources Research

Where do Fire & Ice researchers expect to publish integrative project work? (38 journals named)

Alaska Native Studies Journal	Ambio	American Meteorological Society and AGU journals	Arctic	Arctic Science	Bioscience	Climatic Change	Coastal and Shelf Science
Continental Shelf Research	Earth Interactions	Earth's Future	Ecological Applications	Ecology	Ecology & Society	Ecosphere	Environmental Research Letters
Estuarine	Facets	Fire Ecology	Fire Safety Journal	Fisheries	Forest Science	Human Ecology	International Journal of Wildland Fire
Journal of Coastal Research	Journal of Geophysical Research: Biogeosciences	Journal of Geophysical Research: Oceans	Knowledge Cultures	Native American & Indigenous Studies Journal	Nature Climate Change	Nature Communications	Nature Geosciences
	Oceanography	PLOS One	Progress in Oceanography	Scientific Reports	Society and Natural Resources	Transactions of the American Fisheries Society	

Next Steps

Year 2 Evaluation Plan

Year	1	2	3	4	5
	Faculty/Researcher Survey (years 1-5)				
		Student Survey (years 2-5)			
	Interviews (Project & Group Leads, New Hires)				
	Grants (years 2-5) & Publications (years 3 and 5)				
		Interviews (External Partners, 3-5)			
	Project Metrics				
	Observation (Annual Meetings) and On-Going Communication				