Foundations for Improving Resilience in the Energy Sector against Wildfires on Alaskan Lands (FIREWALL)

**Goal**

The principal objective of the 4-year FIREWALL research project is to develop an interactive risk-informed decision-making platform that holistically integrates (1) vegetation regimes and short-term fire behavior on the Alaskan landscape (**natural environment**), (2) Alaska’s electricity network preparedness and response before, during, and following wildfires (**built environment**), as well as (3) health and social vulnerability of local communities and individuals in the Arctic (**social environment**). This synergistic approach aims to build trust and empower the Arctic communities, electric utilities, emergency responders, and health organizations with a collaborative capacity to conjoin resources and exchange information for enhanced situational awareness and improved resilience to wildfires.

**Background**

- 2-year FIREWALL planning project started in 2020.
- FIREWALL workshop 1 was organized in September 2021.

**FIREWALL Team**

The FIREWALL project converges a multidisciplinary team of academic, civic, community, and industry partners with complementary knowledge, skill set and domain experience.

**Envisioned Research**

FIREWALL research is envisioned to:
- generate wildfire fuels map, GIS-ready products and datasets, and dynamic stream of fire activity data.
- develop a suite of analytics that (1) quantify the spatiotemporal state of risk to the electric network operation when facing progressive wildfires and (2) advise on mitigation decisions.
- develop a cost-benefit optimization platform that facilitates coordinated decision-making and resource allocation in planning for resilience against wildfires.
- characterize the roles and responsibilities, decision-making processes, and informational needs related to community vulnerability among multi-sectoral stakeholders for unplanned and planned power outages and wildfires.
- identify health and social vulnerability measures and risk indicators for Alaskans in the context of wildfires and electricity dependence.

**Envisioned Products**

**References and Acknowledgment**

FIREWALL WEB 2021: https://coeng.uaa.alaska.edu/firewall/
FIREWALL Workshop 2021 video recordings, report, and list of panels: https://coeng.uaa.alaska.edu/firewall/index.php/workshop2021/

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Join us at the second FIREWALL workshop in summer 2023!