A Rapidly Changing Arctic
Rapidly changing conditions in the Arctic have increased access to natural resources and maritime routes, enabling more commercial shipping, resource extraction, or an increased security presence. Permafrost melt and coastal erosion impact infrastructure, communities, and ecosystems. Security and environmental issues are exacerbated by the enormity of the region, a lack of infrastructure (including communications and rescue operation capabilities), and scarce monitoring. Evolving Arctic conditions also present significant challenges for scientists and policy makers looking to gain a better understanding of long term consequences. To ensure proper stewardship and security of this critical region, many issues must be addressed in the near future.

University of Alaska + Sandia Partnerships
Sandia and UAF have maintained a strong relationship for over a decade. Sandia operates facilities in the High Arctic for the Department of Energy, and UAF has extensive research experience throughout the Arctic.

Sandia’s Experience in the Arctic
Sandia’s experience includes twenty years of climate measurement on the arctic coast, energy assessments for Alaska native villages, nuclear materials management for the Air Force, search and rescue drills with the coast guard, remote sensing of permafrost, computer modeling of the melting of the Greenland ice sheet, and airborne synthetic aperture radar (SAR) to detect crevasses and subsurface changes in land and sea ice.
USHARC will provide a multi-disciplinary, year-round High Arctic Center to conduct cooperative scientific research, identify appropriate arctic technologies, and support field tests and exercises. This will enable advances in the development, resilience, preservation, and stewardship of Arctic resources, communities, and environment.

Inter-stakeholder collaborations and establishment of an Arctic station network (USHARC, Barrow/Utqiagvik, and Toolik Lake) will advance U.S. knowledge and monitoring of the Arctic to improve environmental stewardship, security, and sustained economic opportunity.

USHARC Concept

Facility and Site Assets

Location: 1 km from the Arctic Ocean; with access to the lower 48 States via the northernmost road.

Controlled Airspace: Restricted and Warning Areas provide access to the airspace at Oliktok Point and 700 miles across the Arctic Ocean.

Research Support: Lab space, logistical and operational support, UAS facilities, lodging, and test equipment.

Collaboration: Space for Arctic stakeholders; e.g. federal agencies, local governments, industry, and universities.

Ocean Access: A road from USHARC to the Arctic shore.

Shared Use: On-site support equipment, a UAS hangar, real-time observations, and meteorological data.

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