Balancing Science and Culture on the Arctic Coast

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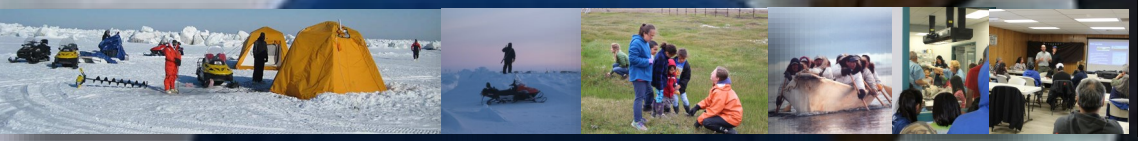
Our Role:

Utqiagvik (Barrow) is at the frontlines of climate change and is the primary Arctic-based logistical hub for Arctic research in the United States. UIC Science, LLC is a company owned by the Ukpeaġvik Iñupiat Corporation (UIC) that provides logistical support to researchers based out of Utqiaġvik . UIC owns the Naval Arctic Research Laboratories (NARL) Campus, the Barrow Arctic Research Center (BARC) and the Charles Etok Edwardsen Barrow Environmental Observatory (BEO) (7500 acres). The UIC Science team is made up of local whalers and outdoorsmen and women. We utilize our traditional and experiential knowledge to assist with a wide variety of U.S. and international Arctic research projects. UIC Science provides support services such as:

- Lodging , lab facilities, storage and staging space
- Equipment and vehicle rentals
- Remote labs and camps
- Utilization of Traditional Knowledge: ie. Ice Guides/Bear Guards
- Outreach Services: Community meetings, school visits, etc.
- Local representation of your research while in the Arctic
- Cultural Resource Management: Phase One Surveys, Project Monitoring, Salvage and Recovery Archaeology
- Science equipment deployment, maintenance and limited technical support



Long History of Research in Utqiaġvik

1850s-1900—Hundreds of commercial whaling vessels enter the Arctic Ocean and begin killing thousands of whales and walrus each year. Hundreds of shipwrecks in the ice cause extensive encounters between Euroamerican whalers and coastal Iñupiat . 1,200 whalers were stranded on the North Slope in one disaster event in 1897.

1852-1854—H.M.S. Plover overwinters in Elson Lagoon near current location of NARL and BARC. The crew reported to US and British Governments the potential of overwintering in Utqiaġvik while maintaining friendly relations with locals.

1881-1883—First International Polar Year: A group of scientists spend 2 years near Pt. Barrow and measure weather conditions, tidal amplitude, auroral display, earth magnetism, minerals, plants, invertebrates, fish, mammals, birds, ethnography, and linguistics.

1886—A group of Naval officers travel through the Colville River tributary and recognize oil and gas resources across the North Slope.

1921—Pres. Warren D. Harding created PET-4 as a oil and gas reserve for the U.S. Navy's new gas-powered submarine fleet. As the retired the coal-powered fleet.

1940s—Naval exploration basecamp established near Pt. Barrow to locate oil and gas resources in PET-4.

1947—Following WWII, the basecamp is expanded and the Naval Arctic Research Laboratories (NARL) are established and became the worlds leading Arctic research campus for several decades. Thousands of research projects record invaluable terrestrial, atmospheric, and marine data.

1971—Ukpeaġvik Iñupiat Corporation (UIC) is established as the local village corporation at Barrow through the Alaska Native Claims Settlement Act (ANCSA).

1980s— Navy pulls out and NARL Campus ownership is turned over to UIC.

1981—PET-4 Renamed NPR-A and transferred from the Navy to the Bureau of Land Management (BLM).

1990s—UIC establishes Charles Etok Edwardsen Barrow Environmental Observatory (7500 acres)

2000s—UIC builds science support logistics capacity, and the Barrow Arctic Research Center (BARC) is established.

Successful Outreach in 2017:

- **BARC Science Fair: August 2-4, 2017—Including kids activities, town hall science presentations, lab tours, and BBQ everyday!**

Volunteers: North Slope Borough Department of Wildlife Management (DWM), the Ilisagvik College, the National Science Foundation, the NSB Mayors Youth Advisory Council, CH2MHill Polar Services (CPS), Battelle NEON (National Ecological Observatory Network), the International Tundra Experiment (ITEX), the University of Texas El Paso (UTEP), Virginia Institute of Marine Sciences (VIMS), San Diego State University (SDSU), Western Kentucky University (WKU), and many others.

Activities: Determining Age in Bowhead and Beluga Whales :Eyeball dissection/Beluga teeth growth layers (DWM); Plant Walk (Ilisaġvik College, ITEX, NEON); Digital GPS Candy Scavenger Hunt (UTEP); Ringed Seal (Natchiq) Workshop: Taking Biological Samples and Traditional Processing (DWM); Togglehead Harpoon Workshop—The Science and Engineers behind Traditional Technology (UICS); Make Silly Putty, Crosslinking to make polymers (VIMS); Remote Sensing Workshop: Kites and Cameras (UTEP); Fish Dissection (DWM); Fun with Carbon Flux: Measuring Carbon in the Arctic (UTEP); and more.

Presenters: NSB DWM, UIC Science, NOAA, UTEP, NEON, ITEX, SDSU, WKU, VIMS, CPS

Lab Tours: Specimens Lab, including everything from jarred fetus' to invertebrates with the NSB Department of Wildlife Management's Leslie Pierce; Archaeology Lab Tour with UIC Science's Senior Scientist Dr. Anne Jensen and the Walakpa Archaeology Salvage Project team; Community Utilization of Online Resources Comp. Lab Tour.

- **Working with the North Slope Borough School District:**

Classroom visits: Chris Polashenski (AIN and BRW), Carin Ashjian (BRW), Victoria Hill (BRW), NASA (BRW), UIC Science and more.

Curriculum development: Currently working with Marilyn Sigman and NSBSD Science Mentors to build teaching units based on local Arctic research.

- **Community meetings:** Many meetings in Utqiaġvik, one in Atqasuk, and one in Nuiqsut

- **2018 Plans:** LOTS of plans for 2018. Examples: Currently in talks with major research institutions to build local college internship program that provides incentives for North Slope students to take part in and conduct scientific research in the Arctic; UIC Science plans to reach out to N Slope communities to organize a list of local wants, needs, and expectations of Arctic science; continue and expand on work with NSBSD to build science curriculum that can be utilized across Alaska and the US.

What makes Community Engagement Meaningful?

Taking Part in a Paradigm Shift

The world is paying more attention to the Arctic and its role in global weather change. With growing interest in Arctic research, U.S. funding agencies and research institutions have recognized the need to pay closer attention to implications of their research on local communities and have taken measures to update the way Arctic researchers interact with Arctic residents. The conversation about shifting towards more meaningful engagement has taken center stage at Arctic research conferences and discussions in recent years. "Meaningful engagement", "co-production of knowledge", "culturally responsive research", and "actionable science" are all terms associated with this trend.

In the past year, UIC Science has clearly recognized and welcomes the extra effort from Arctic researchers to work closer with Arctic communities. UIC Science currently provides logistical services to over fifty research projects throughout the year, so we naturally spend time and build relationships with many researchers. Although we usually begin working with research projects after they have been funded, we strongly encourage researchers to consider possible implications of their research on Arctic communities prior to the submittal of proposals and to contact any potential stakeholders in Arctic communities nearest their project area to share their research ideas. Making these inquires early in the process will allow for proper outreach plans and costs to be worked into the proposal.

Quyanaqpak to the research community for the extra efforts to build mutual understanding and respect between Arctic residents and researchers in 2017!