

ARM's Climate Change Educational Outreach on the North Slope of Alaska

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Introduction

The Department of Energy's Atmospheric Radiation Measurement (ARM) Education Program is involved in climate change education in the communities hosting the ARM Program's field sites. Our goals are to increase awareness of basic science and critical thinking skills concerning climate change environmental science for K-12 students. The program supports capacity building between teachers, students, scientists, and the community. On the North Slope of Alaska (NSA), we focus on developing culturally responsive materials, since a firm grounding in the indigenous culture is fundamental to the development of culturally healthy students and communities. ARM's work on the NSA also includes curriculum development, teacher enrichment, teacher workshops, an educational museum kiosk, a job shadowing program between students and the ARM technicians, and integrating climate information from all the ARM sites for classroom projects.

Educational Kiosk on Climate Change in the North Slope

In collaboration with the Iñupiat Heritage Center (IHC), we are developing a kiosk to present climate change issues through the lenses of two cultures; giving both a Western scientific viewpoint and a traditional Iñupiat viewpoint. IHC plays an important role in the community.

Elder Interview Classroom Projects

ARM is developing a program where local elders in NSA villages are invited into the science classes to share their knowledge of climate and weather with the students. The purpose of this program is as follows:

- Traditional Iñupiat ways and knowledge will be brought into the classroom.
- Traditional knowledge gained from the classroom projects will be used to create interesting, locally oriented lessons on climate change for the schools and students of the North Slope.



Photo of seal hunter from the IHLC Giest photo collection, Barrow, Alaska.

Teacher Workshops

The ARM Education Program plans on conducting in-service training workshops as requested by the North Slope Borough School District. In October 2001, we led a Teacher In-service for Barrow High School teachers. An in-service day typically includes:

- Information on the ARM Project, why ARM scientists study global climate change, and the goals of the ARM Education Program.
- Teaching hands-on lessons to the teachers involving active participation and informational material.
- Field trip to the ARM site to show what and how data are gathered and may include participation in a weather balloon launch. Field trips may include the National Weather Service and National Oceanic and Atmospheric Administration sites as well.

Community Meetings

Community meetings are an important way to introduce ARM to the NSA. The ARM education team met with the Atqasuk community on October 2001 to:

- Get community input on what climate change phenomena have been observed locally, and which of these phenomena were felt to be the most important.
- Recognize other diverse knowledge systems to understand that combining western scientific knowledge with indigenous traditional knowledge expands social participation from the community and introduces new scientific perspectives, as well as rich traditional knowledge of the land.



Dr. Bernie Zak speaking at the Atqasuk Community Meeting.

Curricula and Science Standards for the North Slope

We are working in conjunction with the North Slope Borough School District and the Iñupiat History, Language, and Culture Commission on:

- Updating the NSA Science Standards to integrate the subject of climate change.

- Creating lessons on climate change to fill in gaps in the curricula.

Job Shadowing for North Slope Students

We hope to initiate and develop an annual job-shadowing program in order to improve academic achievement and career development in local schools as well as to increase interest in community members and students in pursuing a career with ARM. The job shadowing will:

- Establish closer working relationships with local schools and educators.
- Introduce students to careers in the environmental sciences.



Tour of the ARM site.

ARM Education Update Newsletter

Information on education and outreach activities at the NSA, Tropical Western Pacific, and Southern Great Plains sites:

- Promotes and supports the ARM Program.
- Provides information and activities for teachers and students on climate studies.

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