Using the Arts as a Bridge to Public Understanding of Data-Intensive Earth Science Research through Climate Prisms: The Arctic

Abstract

An ever-growing body of research in Informal Science Education is showing that the arts contribute greatly to engaging the free-choice science learner. This kind of learning goes outside of the classroom, notably in science centers and museums, where novel, experiential approaches can be piloted.

A new exhibit, Climate Prisms: The Arctic is being mounted by a team of artists and scientists at the Bradbury Science Museum of Los Alamos National Laboratory. It presents the pipeline from collecting soil samples in the Arctic to analyzing them in the labs to the statistical analysis of the findings and on to the input into the climate model, using prisms of art: visual art, poetry, scientific text, information graphics, field imagery and others.

The presentation encourages users to view Arctic science through different lenses. Each person plots their own path, moving through the content at the pace and level that best enables them to engage with the material. With the entry points through multiple artistic voices, learners hearts and feelings are directly reached, building primarily affective connections and then curiosity, rather than cognitive.

The project itself is a large display screen driven by a touch interface designed for individual or small group viewing. Content paths are determined by an underlying system of tags, levels, content categories and related research areas. A screen shows a set of images. Each image can be accessed to provide image-specific information or can be a launching pad for a new set of related content and images that allows the user to continue on their exploration journey.

Each person, each time they visit, creates a unique path through over 2000 pieces of content according to their unique set of learning assets and interests they bring with them to that visit. Embedded assessment will log related demographics and each individual foray through the content. These assessments will be analyzed to explore trends of use and drive further content development.

Status

Climate Prisms: The Arctic has been in development since May 2013, and is currently in its pre-presentation phase. A beta test will take place in October 2013. The exhibit is expected to be on display and available to public access by February 2014, with a grand opening anticipated for Earth Day 2014.

Acknowledgements:

Many thanks to others involved to date in Climate Prisms: The Arctic

Art
Michael G. Smith, Elizabeth Harkes, Heather Ward

Science
Gerrit Atmadja, Brent Newman, Mark Peterson, Florence Martin

Evaluation
Cynthia Pennington, Craig Tennant

Museum Interpretation
Jack Alstrom, Hrista Bariadoula, Dominic Brooke, Bruce Campbell, David Estrada, Chrisei Thrommerson, Jennifer Payne

The Next Generation Ecosystem Experiments (NGEE) Arctic project is supported by the Office of Biological and Environmental Research in the DOE Office of Science.