

# Arctic Science Ministerial Side-Event on Arctic Science, Education, and Citizen Empowerment

Tuesday, September 27, 2016 | 1-4pm | ARCUS DC Office | #ArcticSciEd

Spend the afternoon exploring hands-on, Arctic STEM activities and resources! Attendees will have the chance to learn about tools ranging from mobile apps to scenario explorations to card and board games that help formal and informal educators, school administrators, lifelong learners, and families bring the Arctic into their homes and classrooms.

## Featured Resources...

The PoLAR Climate Change Education Partnership has developed a portfolio of activities and resources that engage a wide variety of audiences and are exciting to use in homes, museums, classrooms, and communities, including: **EcoChains: Arctic Futures**, a 2-player card game of strategy and survival; **Arctic SMARTIC**, an interactive role play exercise about managing resources in times of change; **Polar Explorer**, a mobile app for diving into sea level; and **Arctic Jigsaw Puzzles** for exploring changes in glaciers and ice sheets.

Join the Arctic Research Consortium of the U.S. (ARCUS) to learn more about what ARCUS members and PolarTREC teachers are doing to invigorate polar science education and understanding by bringing K-12 educators and polar researchers together. At the ARCUS display you will also be able to get a glimpse of life in colder temperatures by trying on components of an **Extreme Cold Weather (ECW) Gear Kit** and join K-12 educator and PolarTREC alumnus, John Wood, as he leads participants through **CO2 Flux**, an activity that uses data from the Alaskan tundra to explore shifts in carbon dioxide levels related to plant photosynthesis and respiration.

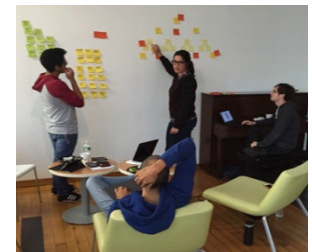
The **National Ocean Sciences Bowl (NOSB)** is an academic competition and program that addresses a national gap in environmental and earth sciences in public education by introducing high school students to, and engaging them in, ocean science, preparing them for ocean science-related and other STEM careers, and helping them become knowledgeable citizens and environmental stewards. The NOSB's focus on ocean science education is critical as humans rely on a healthy ocean for oxygen, resources, jobs, and more. Our future leaders must be knowledgeable about ocean issues.

Scientists from the **Woods Hole Research Center** travel to the Arctic each year to study the effect of climate change on permafrost. Permafrost contains an enormous amount of carbon. As global temperatures warm the permafrost thaws – releasing carbon dioxide and methane into the atmosphere. The team extracts permafrost cores to study the thawing process and related emissions, which will help create better global carbon cycle models. At the WHRC permafrost display you can see the equipment used in this research as well as photos from field work in Siberia.

## ...Plus A Unique Opportunity!

Ever wanted to create your own educational game? Now is your chance! Join the **Mini Arctic Game Jam**, where you will work with others to rapidly develop ideas for an Arctic-themed game. Game Jams are an innovative and exciting way to engage people of all ages in learning about the impacts of, and solutions to, major social problems like climate change. Learn about ways to use this model in educational settings, and find out about an upcoming opportunity to host your own Arctic Climate Game Jam!

Conference Room C  
2:15-3:30pm



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## Featured Resources

The **Arctic Portal** is a non-profit organization based in Akureyri, Iceland which acts as a comprehensive gateway to Arctic information and data. Our aim is to increase information-sharing and cooperation among Arctic stakeholders and the rest of the world by communicating, educating and raising awareness about the Arctic and the challenges and opportunities in the region.

The online **Arctic Renewable Energy Atlas** (AREA) will provide solar, wind, geothermal, marine and hydrokinetic resource maps within an easily accessible website. The Atlas will eventually also include energy consumption and efficiency data as well as videos on clean energy produced at the community level.

The **Global Terrestrial Network for Permafrost** (GTN-P) is the primary international programme concerned with monitoring permafrost parameters with the long-term goal of obtaining a comprehensive global view of the spatial structure, trends and variability of changes in permafrost temperature and active layer thickness.

**EDU-ARCTIC** aims to encourage interest in science, technology, engineering and mathematics (STEM) education among students between the ages of 13 and 20 by providing an innovative and attractive educational programme accessible to schools all across Europe. The project also aims to establish strong links between the research and education communities by connecting schools participating in the project to scientists at Arctic research stations and research institutes throughout Europe.

WWF is developing communication assets that build awareness and demonstrate support for the permanent protection of America's Arctic Ocean from off-shore oil and gas development. These include **America's Arctic Important Marine Areas StoryMap** - a web-based presentation that integrates text and images to introduce the Arctic Ocean's charismatic wildlife and the ecological hot-spots on which they depend; and **The Case Against Arctic Drilling** - a 90 second animated video focusing on the carbon budget busting impacts and environmental risks of offshore drilling in the Beaufort and Chukchi Seas.

NASA monitors Earth's vital signs from space with a fleet of satellites. Science data taken from these satellites, through NASA's Near Earth Network and Space Network allows scientists to understand and predict Earth's changes. One of the areas that NASA satellites hone in on are changes that occur in the Arctic region. The **PufferSphere** is a 360 degree multi-touch, interactive system that will highlight some of NASA's Earth science data.

Through the **Living Our Cultures** exhibition in Alaska and diverse programs co-created with indigenous partners, the Arctic Studies Center opens minds to indigenous knowledge, art, and design traditions of the North. The ASC's ARCUS table will offer demos of the Sharing Knowledge web site (<http://alaska.si.edu>) and videos about teachers and students engaged in Alaska Native arts such as making snowshoes, hunting hats, and seal intestine clothing. Take-away materials will include teacher's guides, lesson plans for using the web site in the classroom, instructional DVDs, and books.

