

# Witness The ARCTIC

Chronicles of the NSF Arctic Sciences Division

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## 2010 State of the Arctic Conference: At the Forefront of Global Change

The State of the Arctic Conference, to be held 16–19 March 2010 in Miami, Florida, will be a major milestone for arctic science, providing an international forum to review current knowledge of the arctic system in a time of rapid environmental change and point to future research, resource management, and policy directions. Participants will include a diverse and interdisciplinary group of scientists, students, agency personnel, policy makers, stakeholders, northern representatives, and media. Over 200 talks and two poster sessions will cover all aspects of arctic change, including sea ice, atmosphere, marine mammals and fisheries, vegetation, geopolitics and international relations, resource management, impacts on local communities, connections to lower latitudes, and many others.

Detailed information about the event can be found on the conference website at: <http://soa.arcus.org>.

### Conference Program

The State of the Arctic Conference program has been structured to facilitate cross-disciplinary exchange and discussion. Keynote speakers for the event currently include:

- Arden Bement, Director of the National Science Foundation (NSF);
- Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere and Administrator of the National Oceanic and Atmospheric Administration (NOAA);

- Vera Metcalf, Director of the Eskimo Walrus Commission;
- Senator Lisa Murkowski (Alaska);
- Marianne Lykke Thomsen, Senior Policy Advisor of the Greenland Department of Foreign Affairs and Senior Arctic Official of the Arctic Council;
- Mead Treadwell, Chair of the U.S. Arctic Research Commission (USARC); and
- Wendy Watson-Wright, Assistant Director General of the United Nations Educational, Scientific, and Cultural Organization (UNESCO).

Sessions are organized by four main themes:

- **Advances in arctic system understanding.** Presentations will concentrate on basic functioning of the arctic system, including human dimensions, progress in observing and understanding components of the arctic system, and limitations of present study methods. Keynote speakers for this theme include Andrea Lloyd (Middlebury College) and Maribeth Murray (International Study of Arctic Change).
- **Arctic change.** Presentations will focus on rapid, system-scale changes and our capability to project future states of the arctic system under various scenarios. Keynote speakers for this theme include Louis Fortier (Université Laval and ArcticNet) and Duane Smith (Inuit Circumpolar Council Canada).
- **Linkages to the Earth system.** Presentations will cover linkages and feedbacks between the arctic system and the Earth system. Keynote speakers for this theme

include John Walsh (International Arctic Research Center) and Oran Young (University of California Santa Barbara).

- **Translating research into solutions.** Presentations will address informed solutions to problems caused by environmental change, including establishing priorities for mitigation and adaptation and evaluating solutions, new and innovative approaches to the communication of scientific information about arctic change to stakeholders, and the interface of science and policy. Keynote speakers for this theme include Robert W. Corell (Arctic Climate Impact Assessment and Climate Action Initiative) and Elke Weber (Center for Research on Environmental Decisions at Columbia University). An international panel will explore issues on intersections between science and policy in a changing arctic.

The conference will also feature a presentation by the Pavva Iñupiaq Dancers of Fairbanks, Alaska, which was formed to preserve and interpret the culture and traditions of the Iñupiat peoples of the arctic region through song and dance.

The fourth day (Friday, 19 March) of the conference will focus on international collaboration in arctic research. It is organized around a series of plenary talks outlining the science reliant on future international collaborations, a review of several arctic research programs and projects, and an international agency panel discussion. Plenary sessions will be broadcast live via the conference website to allow for “virtual” participation.

### Student Involvement

The State of the Arctic conference offers an exciting program to engage and support students at the event. In addition to 25 student travel awards, students will participate in a mentoring program, a “Conversation with Scientists” special luncheon, and a workshop presented by Susan Buhr, Cooperative Institute for Research in Environmental Sciences (CIRES), on effectively communicating climate change science.

### Conference Sponsors

The State of the Arctic Conference was conceived and developed by the interagency Study of Environmental Arctic Change (SEARCH) and NSF Arctic System Science (ARCSS) Program communities—major funding is provided by the NSF Division of Arctic Sciences. Other sponsors of the conference include the National Oceanic and Atmospheric Administration (NOAA), International Arctic Systems for Observing the Atmosphere (IASOA), U.S. Arctic Research Commission (USARC), North Slope Science Initiative (NSSI), International Arctic Science Committee (IASC), Arctic Ocean Sciences Board (AOSB), Alaska Ocean Observing System (AOOS), U.S. Department of Energy (DOE), National Aeronau-

tics and Space Administration (NASA), and World Wildlife Fund (WWF).

The Arctic Research Consortium of the U.S. (ARCUS) is organizing the conference on behalf of the arctic community and sponsoring organizations. Active partners in conference planning include the International Study of Arctic Change (ISAC), ArcticNet, and Developing Arctic Modeling and Observing Capabilities for Long-term Environmental Studies (DAMOCLES).

For more information on the State of the Arctic Conference, go to <http://soa.arcus.org>, or contact Helen Wiggins, Director of Programs at ARCUS ([helen@arcus.org](mailto:helen@arcus.org)). ■

## State of the Arctic Conference Organizing Committee Members

*\*Executive Committee Member*

**\*Peter Schlosser**, Committee Chair, Columbia University

**Elena N. Andreeva**, Russian Academy of Sciences

**\*Hajo Eicken**, University of Alaska Fairbanks

**Craig L. Fleener**, Alaska Department of Fish and Game

**Bruce Forbes**, University of Lapland

**\*Martin Fortier**, Université Laval

**Susan E. Fox**, Arctic Research Consortium of the United States

**Chris M. Furgal**, Trent University

**\*Jean-Claude Gascard**, Université Pierre et Marie Curie

**Jay Gulledge**, Pew Center on Global Change

**Robert (Max) Holmes**, Woods Hole Research Center

**Janet M. Intrieri**, National Oceanic and Atmospheric Administration

**Andrea H. Lloyd**, Middlebury College

**Shawn Marshall**, University of Calgary

**\*Maribeth Murray**, International Study of Arctic Change

**\*Joshua Schimel**, University of California, Santa Barbara

**Koji Shimada**, Tokyo University of Marine Science and Technology

**Duane R. Smith**, Inuit Circumpolar Conference Canada

**Amy Tidwell**, University of Alaska Fairbanks

**Michael Tjernström**, Stockholm University

**\*Helen V. Wiggins**, Arctic Research Consortium of the United States

**Jinping Zhao**, Ocean University of China

## Interagency Study of Environmental Arctic Change (SEARCH)

### SEARCH and ARCSS Form Joint “Understanding Arctic Change” Task Force

Over the past few years, the SEARCH (Study of Environmental Arctic Change) and ARCSS (Arctic System Science Program) communities have discussed the increasing need for improved integration and coordination between the two programs and their respective planning processes. Recently, the SEARCH Science Steering Committee (SSC) and ARCSS Committee agreed to move forward with a joint process to align efforts for more efficient scientific planning and implementation and to explore scientific synergies through a SEARCH-ARCSS task force on “understanding arctic change.”

The Understanding Arctic Change Task Force will lead community activities to establish a long-term vision and provide the scientific framework for a modern effort for understanding the arctic system. This effort will outline an approach that facilitates a broad array of activities—from individual proposals, to synthetic workshops, to comprehensive research programs—to better address current scientific challenges in a rapidly changing arctic system. This group (see box next page for members), with input and review from the broader community, will identify needs for accelerated community capacity-building

and understanding of the rapidly changing arctic system. The task force will have a term of one year. The central product of the task force will be a community white paper to: identify key scientific unknowns and obstacles to advances in understanding arctic system change; and identify the next steps in synthesis activities, methodologies, mechanisms, and approaches to address the identified key science questions.

The white paper will be developed with open community comment and review and is expected to be complete in December 2010.

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These activities will result in improved integration between the current SEARCH and ARCSS efforts, advance SEARCH “Understanding Change” activities, and improve our understanding of the arctic system. The process is designed to allow ideas and vision to grow from the scientific community and inform viable research programs. The result will include identification of key scientific and structural needs, with a range of activities emerging to address those needs, and a focus on nimble and decentralized structures.

With the formation of the task force, the existing ARCSS Committee will cease to exist, and ARCSS-relevant science planning activities will be addressed in the short-term by the ad hoc task force. The longer-term structure and activities will be developed as task force activities are com-

pleted, with guidance from the broader science community.

Updates on the SEARCH-ARCSS Understanding Arctic Change Task Force will be posted to the SEARCH website as information becomes available ([www.arcus.org/search/index.php](http://www.arcus.org/search/index.php)). For more information, contact the task force co-chairs Josh Schimel ([schimel@lifesci.ucsb.edu](mailto:schimel@lifesci.ucsb.edu)) or John Walsh ([jwalsh@iarc.uaf.edu](mailto:jwalsh@iarc.uaf.edu)), or Helen Wiggins at ARCUS ([helen@arcus.org](mailto:helen@arcus.org)). ■

## “Understanding Arctic Change” Task Force Members

**Josh Schimel**, Co-Chair, University of California, Santa Barbara (UCSB)  
**John Walsh**, Co-Chair, University of Alaska Fairbanks (UAF)  
**Breck Bowden**, University of Vermont  
**Terry Chapin**, UAF  
**Susan Crate**, George Mason University  
**Hajo Eicken**, ex officio as incoming SEARCH Science Steering Committee Chair, UAF  
**Scott Elliott**, Los Alamos National Laboratory  
**Jackie Grebmeier**, University of Tennessee, Knoxville  
**Lawrence Hamilton**, University of New Hampshire (UNH)  
**Regine Hock**, UAF  
**Marika Holland**, National Center for Atmospheric Research (NCAR)  
**Andrea Lloyd**, Middlebury College  
**Susanne Moser**, Susanne Moser Research and Consulting  
**James Overland**, National Oceanic and Atmospheric Administration (NOAA) Pacific Marine Environmental Laboratory (PMEL)  
**Gavin Schmidt**, National Aeronautics and Space Administration (NASA) Goddard Space Flight Center  
**Mark Serreze**, University of Colorado at Boulder (CU-Boulder)  
**Michael Steele**, University of Washington (UW)  
**Matthew Sturm**, U.S. Army Cold Regions Research and Engineering Laboratory (CRREL)

## Sea Ice Outlook: 2009 Summary Reports and Plans for 2010

The Study of Environmental Arctic Change (SEARCH) Sea Ice Outlook (SIO) is an international effort to provide a community-wide summary of the expected September arctic sea ice minimum at pan-arctic and regional scales. Several activities have been completed or are underway to summarize the 2009 season and prepare for the 2010 Outlook.

The 2009 Sea Ice Outlook Summary Reports, which are available online ([www.arcus.org/search/seaiceoutlook/2009\\_outlook/2009\\_pan-arctic\\_summary.php](http://www.arcus.org/search/seaiceoutlook/2009_outlook/2009_pan-arctic_summary.php)), provide a retrospective review of the 2009 Outlook effort and results. The summary reports, based on statements from nearly 20 contributing groups, include analyses of factors driving the 2009 minimum, additional data or products that would be useful for improving outlooks in the future, and implications for the future state of arctic sea ice.

As an additional follow-up activity to the 2009 season, Outlook organizers held an open meeting at the American Geophysical Union (AGU) Fall Meeting to provide

an opportunity for the science community to discuss lessons learned from the 2009 Outlook, provide input into planning and improvements for the 2010 Sea Ice Outlook, and participate in the effort as a whole. Participants discussed key events of the 2009 season: 2009 was the third lowest summer extent and fall freeze-up was late, with a near record minimum ice extent record set for November, which continued through January 2010.

Participants also discussed additions and improvements for the 2010 Outlook, including:

- The 2010 Outlook will add an additional component to the regional outlooks that will evaluate outlook maps in the context of marine mammal management and subsistence, with a focus on walrus. This would further strengthen interagency linkages and collaboration.
- The 2010 Outlook should help define priority arctic observations that would support improved sea ice outlook predictions.

- The 2010 Outlook should be extended into the fall, in order to provide a longer seasonal view with information on freeze-up timing and dynamics.

Planning for the 2010 Sea Ice Outlook will continue with a meeting at the March State of the Arctic Conference in Miami, Florida. More information and meeting announcements will be distributed via ArcticInfo and available on the Outlook website ([www.arcus.org/search/seaiceoutlook/index.php](http://www.arcus.org/search/seaiceoutlook/index.php)).

A paper describing the Outlook effort was recently published in *Eos* (Volume 90, Number 37, 15 September 2009). For more information on the Sea Ice Outlook, contact Helen Wiggins at ARCUS ([helen@arcus.org](mailto:helen@arcus.org)), James Overland at the National Oceanic and Atmospheric Administration ([james.e.overland@noaa.gov](mailto:james.e.overland@noaa.gov)), or Hajo Eicken at the University of Alaska Fairbanks ([hajo.eicken@gi.alaska.edu](mailto:hajo.eicken@gi.alaska.edu)). ■

## AON Design and Implementation Task Force Formed

The interagency Study of Environmental Arctic Change (SEARCH) is organizing the first phase of a rapid planning process to provide guidance to NSF and other governmental agencies, the scientific community, and others engaged in arctic environmental observations on how to best achieve a well-designed, effective, and robust arctic observing system. With support from the NSF Office of Polar Programs, this planning effort is led by a recently formed Arctic Observing Network (AON) Design and Implementation (ADI) Task Force. Composed of 13 researchers with observing-system expertise both within and outside of the Arctic, the ADI Task Force will work with other key experts to identify and assess effective, promising approaches and tools for multidisciplinary observing system design and optimization.

The International Polar Year has facilitated substantial enhancement of observation campaigns and deployment of sensor networks, resulting in a phase of more

widespread observing efforts carried out by many countries, including the AON projects currently funded by NSF. With U.S. agencies and others maintaining complementary observation efforts in the Arctic, there is now a need for coordination, consolidation, and optimization of the existing observing system elements, as well as for development of a broader strategy that includes more detailed design studies to enhance and sustain the observing system.

Building on community input, a combination of virtual and in-person meetings, and a small array of proof-of-concept studies overseen by the task force, the ADI planning effort is expected to culminate in summer 2010 with a summary report of recommendations for the next steps in optimizing, coordinating, and enhancing the existing components of an international arctic environmental observing system.

As part of the first phase of this effort, the ADI Task Force convened a small workshop in early December 2009 in con-

junction with the AON Principal Investigators' meeting in Boulder, Colorado. Workshop participants reviewed lessons learned from other large-scale observing system efforts, discussed a range of different approaches that hold promise in observing system design, and developed rough outlines of potential proof-of-concept studies. Based on this work, follow-up activities, and reviews by the task force, a set of exploratory, small-scale studies has been developed to aid in task force efforts. These studies will be reviewed and synthesized at a follow-up workshop in early summer.

The ADI Task Force welcomes comments and input regarding observing system design efforts. For more information on the ADI planning effort, including task force membership, or to provide input, go to [www.arcus.org/search/aon.html](http://www.arcus.org/search/aon.html) or contact Hajo Eicken at the University of Alaska Fairbanks ([hajo.eicken@gi.alaska.edu](mailto:hajo.eicken@gi.alaska.edu)). ■

## U.S. Arctic Research Commission

### USARC Appoints Cheryl Rosa as Deputy and Alaska Office Director

The U.S. Arctic Research Commission (USARC) recently appointed a new deputy director and reopened their Anchorage office. The commission's biennial *Report on Goals and Objectives for Arctic Research* is also in the final stages of review.

Cheryl Rosa was appointed as USARC deputy director in November 2009. She will also serve as director of the commission's Alaska office in Anchorage. During this appointment, which may last for up to four years, Rosa will work with the seven presidentially appointed USARC commissioners to strengthen arctic research and ties between the commission and the State of Alaska and international partners, fully implement the Arctic Research and

Policy Act (as amended), and improve coordination of arctic research within the U.S. As director of the Alaska office, which reopened in November 2009, Rosa will serve as a liaison between USARC and the State of Alaska. Rosa replaces Lawson Brigham who resigned from the position in December 2008.

Rosa received a Ph.D. in veterinary medicine from Tufts University in 1997 and a Ph.D. in biology from the University of Alaska Fairbanks in 2006. She is a research biologist and wildlife veterinarian for the North Slope Borough (NSB) Department of Wildlife Management in Barrow, Alaska. Her appointment to the USARC from the NSB is through the

Intergovernmental Personnel Act Mobility Program.

Rosa has worked and lived in the Arctic for almost a decade. She has a wide range of research experience on the North Slope, including studies of wildlife health and zoonotic disease, marine mammal stranding response, subsistence food safety, and oil spills. Her fieldwork includes marine and terrestrial mammal research in both the U.S. and Russia.

Rosa has been active on many local, state, and federal committees. Over the past three and a half years, she served as an advisor to the NSB Fish and Game Management Committee, Joint Commissions of the Inuvialuit Game Commission

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## Planned Upgrades Will Expand Toolik Field Station's Winter Capacity

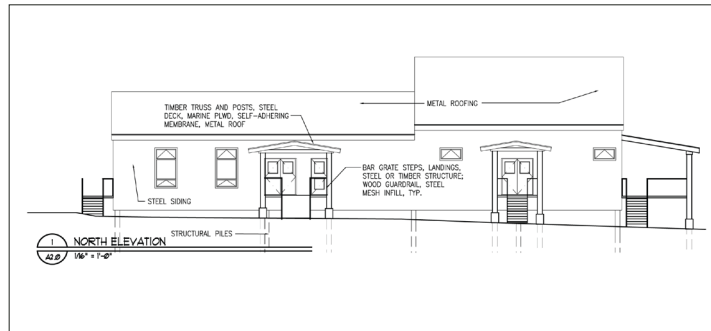
Toolik Field Station (TFS), located on Alaska's north slope and administered by the Institute of Arctic Biology at the University of Alaska Fairbanks, has operated year-round since 2006. Plans are underway for a new year-round-capable kitchen and dining facility, which will increase the "winter-over" capacity of the station, and scientific services have been expanded to include an environmental data center. TFS management is also in the process of developing a new "master plan", which will direct further station development over the next ten years.

### Recent Upgrades and Plans for Future Development

Between October and April, TFS capacity is currently limited to 16 scientists at a time. Although the station has winter-capable housing for 30 people, capacity during these months is constrained by the size of the station's insulated kitchen and dining space.

To address this need, plans are underway for a new year-round-capable kitchen and dining hall at TFS. In collaboration with CH2M HILL Polar Services (CPS) and with project funding provided through the American Recovery and Reinvestment Act of 2009, design of the new facility has been developed over the past 11 months and is now nearly complete. Construction of the structure, which will seat approximately 100 people, is expected to begin in summer 2010. This will be the first new structure at the station since 2004 when the Cottongrass Dormitory was commissioned.

In addition to addressing the station's winter needs for expanded kitchen and dining space, the new facility will more adequately meet the needs of the summer population, which can be as high as 125 people per day. During the winter months, the extra dining space will be used for science support.



An elevation drawing of the planned year-round-capable kitchen and dining facility at Toolik Field Station. Construction of the structure, which will seat approximately 100 people, is expected to begin in summer 2010. Photo credit: Johnson River Enterprises LLC and Design Alaska.

TFS management is also currently in the process of developing a new master plan that is intended to guide further station expansion over the next ten years—this plan will build on community recommendations presented in a previous report, *Science Support at the Toolik Field Station, Alaska: Directions for the Next 10 Years*, which summarizes the findings of an NSF-funded strategic planning workshop in 2004. A draft of the plan, which is also being developed in collaboration with CPS, is tentatively expected to be available for community review in spring 2010.

The plan addresses support for several upcoming science initiatives at TFS, including the National Ecological Observatory Network (NEON). Funded primarily by NSF, NEON is a proposed continental-scale research platform that will collect data on the impacts of climate change, land use change, and invasive species on natural resources and biodiversity.

NEON has partitioned the U.S. into 20 eco-climatic domains, each of which represents different regions of vegetation, landforms, climate, and ecosystem performance. In each of the domains, data will be collected about climate and atmosphere, soils, streams and ponds, and a variety of organisms over the next 30–50 years.

Plans are underway for TFS to become the base for the "tundra" domain and the new master plan will lay the groundwork for meeting this objective by 2013.

More information on NEON is available online ([www.neoninc.org/](http://www.neoninc.org/)).

### Toolik Field Station's Environmental Data Center

Over the past three years, TFS has expanded collection of baseline environmental data to complement and extend the measurements already being made by Arctic Long Term Ecological Research (LTER) Network scientists based at the station—these activities were initiated in response to community recommendations presented in *Science Support at the Toolik*

*Field Station, Alaska: Directions for the Next 10 Years*. TFS has recently taken a greater role in managing the data and has published the information online for use by the research community (<http://toolik.alaska.edu/edc/>).

Currently, baseline environmental and biological data being collected by the TFS Environmental Data Center include:

- weather (expanding and continuing a 30-year dataset);
- birds (phenology, abundance, and status);
- plants (phenology and herbarium);
- snow cover and depletion (time lapse photography); and
- timing of other environmental events (a daily naturalist journal).

The TFS Environmental Data Center also provides a suite of commonly used laboratory and field equipment and limited assistance with fieldwork.

TFS recently joined SCANNET, a circum-arctic network of terrestrial field site and research station managers and user groups that collaborate to improve comparative observations and access to information on environmental change in the North. More information on SCANNET is available online ([www.scannet.nu/](http://www.scannet.nu/)).

For more information on field station activities, see [www.uaf.edu/toolik/](http://www.uaf.edu/toolik/), or contact Mike Abels ([maabels@alaska.edu](mailto:maabels@alaska.edu)), Brian Barnes ([bmbarnes@alaska.edu](mailto:bmbarnes@alaska.edu)), or Donie Bret-Harte ([msbreharte@alaska.edu](mailto:msbreharte@alaska.edu)). ■

## Project Integrates Permafrost Science and Climate Change Modeling

Permafrost thaw, a result of ongoing high latitude warming, has a number of consequences ranging from infrastructure damage to accelerated release of carbon and methane to the atmosphere. Despite the important role of permafrost in the geological, ecological, engineering, and climate change sciences, direct interaction between the dispersed permafrost community and the climate modeling community is limited.

In a project funded by the NSF Arctic Natural Sciences program, Vladimir Romanovsky and John Walsh, both of the University of Alaska Fairbanks (UAF), are working to integrate climate change modeling and permafrost science in ways that are responsive to user needs. Working with colleagues from the Danish Meteorological Institute, Technical University of Denmark, Arctic Technology Center of Greenland, and Asiaq of Greenland, Romanovsky and Walsh are using large-scale climate models to better understand recent and future permafrost variability, retreat, and degradation in Greenland and Alaska.

Permafrost is widespread in both western Greenland and northern Alaska but has different characteristics in each area. In Greenland, bedrock is present near the surface and can be used as a building foundation. In Alaska, bedrock is not typically near the surface and, therefore, communities and infrastructure are more susceptible to permafrost degradation. Because the two permafrost areas are so different geographically, there is potential for extrapolation of the findings to other permafrost areas in the Arctic. For example, Alaska is similar to interior areas of Siberia, while western Greenland is more analogous to some permafrost-affected areas of northern Europe.

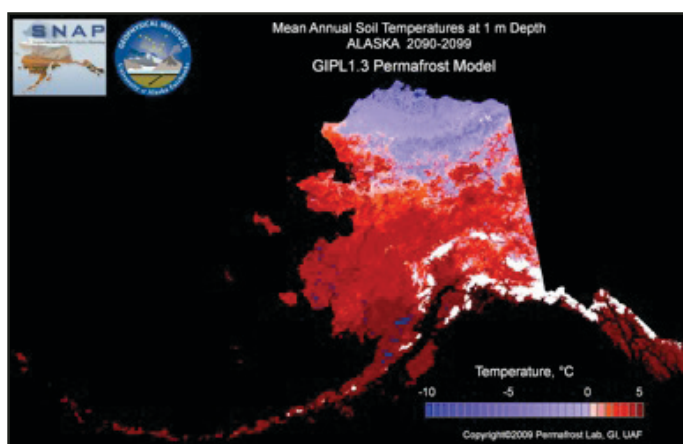
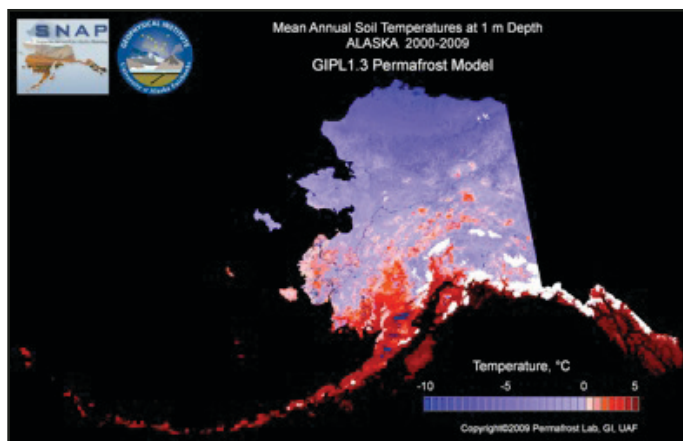
For this comparative study of permafrost, which includes measurements, modeling, and impact assessment, the research team has established a series of 11 monitoring sites—four in Alaska and seven in Greenland—representative of the range of permafrost types encountered in the two countries. Using data collected from these locations, as well as from other previously established observing sites in Alaska, the researchers are mapping present-day permafrost conditions and modeling the projected evolution of permafrost in the two regions through 2099.

Projected scenarios are generated using the Geophysical Institute Permafrost Lab (GIPL) 1.3 model, which was developed over the past three years and designed specifically to assess the effect of a changing climate on permafrost. Initial project results indicate that major changes in permafrost temperature and distribution will take place both in Greenland and Alaska during the 21<sup>st</sup> century. The area of permafrost degradation in Alaska, however, is projected to be more substantial—by the end of the 21<sup>st</sup> century, permafrost will still be stable only in the Brooks Range and on the North Slope (see images this page). By

contrast, the models suggest that more than half of the present-day permafrost area in Greenland will remain stable, although active layer depths will increase.

This project targets the needs of residents, stakeholders, and planners in the respective regions. Walsh and Romanovsky will share research results with civil engineers and land managers, including information about the present sensitivity of permafrost to climate stress and how permafrost within these regions might change under different scenarios of climate variability. They are currently in the process of using their findings to develop “risk maps” for specific regions, which will accompany recommendations concerning infrastructure and engineering. Other plans include projections for specific locations identified by community members in Alaskan villages. The site-specific concerns of village residents are already being identified through visits to western Alaska communities by project team members.

For more information, contact John Walsh ([jwalsh@iarc.uaf.edu](mailto:jwalsh@iarc.uaf.edu)) or Vladimir Romanovsky ([veromanovsky@alaska.edu](mailto:veromanovsky@alaska.edu)) at UAF. ■



*Developed over the past three years, the Geophysical Institute Permafrost Lab (GIPL) model was designed specifically to assess the effect of a changing climate on permafrost. The images above show ground temperatures at 1 meter depth in Alaska for the periods 2000–2009 (top) and 2090–2099 (bottom). Large areas of land that are presently below freezing (top image blue areas) will warm to above-freezing annual mean temperatures (bottom image red areas) by the 2090s. These simulations were developed using downscaled global climate model output to drive the GIPL 1.3 model and calibrated using field measurements from various Alaskan sites.*

## Second Phase of SAON Underway

The Sustaining Arctic Observing Networks (SAON) initiative has now begun a second phase, and the Arctic Council (AC) together with the International Arctic Science Committee (IASC) and the World Meteorological Organization have formed a steering group (SAON SG) to lead its development.

Formed in response to the AC's 2006 Salekhard Declaration, SAON is aimed at advancing multinational engagement in developing sustained and coordinated pan-arctic observing and data sharing systems that serve societal needs, particularly related to environmental, social, economic, and cultural issues.

In the first phase of the initiative, a SAON Initiating Group (IG) composed of representatives of international organizations and agencies and northern residents involved in research and observing was formed to solicit information and advice contributing to recommendations on achieving SAON goals. In 2007 and 2008, the SAON IG held a series of workshops to develop the recommendations and provide an opportunity for the arctic observing community to meet and contribute experience and expertise to the process. Participants addressed five key questions:

- What arctic observing sites, systems, and networks (activities) currently exist?
- What spatial, temporal, and disciplinary gaps exist?
- How will gaps be filled and the entire effort sustained?
- How are these activities coordinated and integrated?
- How is free, open, and timely access to be achieved?

Published in December 2008, *Observing the Arctic: Report of the Sustaining Arctic Observing Networks (SAON) Initiating Group* is derived from these discussions and makes four recommendations, which are summarized here:

- The AC should lead the facilitation of international collaboration among government agencies, researchers, and northern residents, especially indigenous people at the community level, to ensure a sustainable pan-arctic observing system.

- The governments of the AC member states should commit to: sustaining their current level of observing activities and data and information services and make efforts to increase the scope of those activities in the future; and creating a dissemination protocol to make data and information freely, openly, and easily accessible in a timely fashion at a minimal cost to users.
- Arctic states are urged to increase inter-governmental cooperation in coordinating and integrating arctic observing activities and associated data and information management. Each arctic state is encouraged to create a national agency to coordinate their arctic observing—these agencies will form the basis for increased intergovernmental cooperation.
- Since arctic issues are of global concern, AC member states are urged to welcome non-arctic states and international organizations as partners in the intergovernmental cooperation that will be necessary to sustain and improve arctic observing capacity and information services.

### Second Phase

In response to the AC's April 2009 Tromsø Declaration and building on the report recommendations, the second phase of SAON was initiated with the formation of the SAON SG in June 2009. The SAON SG consists of representatives of the eight arctic countries, AC permanent participants and working groups, IASC, and the World Meteorological Organization—it is co-chaired by John Calder (AC Arctic Monitoring and Assessment Programme [AMAP]) and David Hik (IASC).

The goal of the SAON SG is to identify and implement steps to improve coordination and integration of arctic observing

activities, and to promote sharing and synthesis of data and information. To accomplish this goal, the SAON SG interacts with people who use observing data; operate observing sites, systems, and networks; and provide data and information services to promote communication, cooperation, and coordination between all parties. The SAON SG also works with governments to advocate for the resources necessary to sustain and increase arctic observing activities and to encourage intergovernmental cooperation in arctic observing.

The SAON SG has developed a work plan and set priorities for its activities between now and April 2011, when AC ministers are scheduled to meet in Greenland. Priorities of the plan include:

- developing an inventory of existing networks;
- identifying needs, gaps, and opportunities for improving data access and sharing;
- improving linkages between community-based and science-based monitoring; and
- facilitating coordination and integration among activities supported by national agencies.

The SAON SG is sponsoring a workshop to ascertain the views and support of agencies currently involved in arctic observing activities. The meeting will be held on 18–19 March 2010 during the State of the Arctic Conference in Miami, Florida (pages 1–2), and will focus on defining benefits from and ways to accomplish improved coordination and collaboration in funding and performing arctic observations.

For more information, see [www.arcticobserving.org](http://www.arcticobserving.org) or contact Odd Rogne (AMAP), Lars-Otto Reiersen (AMAP), or Volker Rachold (IASC) at the SAON Secretariat ([info@arcticobserving.org](mailto:info@arcticobserving.org)). ■

### ASSW 2010 Hosted by Greenland

The 12<sup>th</sup> Arctic Science Summit Week (ASSW) will be held in Nuuk, Greenland, on 15–19 April 2010. The purpose of the summit, which is organized by the International Arctic Science Committee (IASC) and other scientific organizations, is to provide opportunities for international coordination, collaboration, and cooperation in all areas of arctic science and to combine science and management meetings. The event features annual meetings of arctic organizations and presentations on arctic research being undertaken by the host country.

For more information on ASSW 2010, see the conference website ([www.assw2010.org/](http://www.assw2010.org/)). ■

and NSB, and Alaska Eskimo Whaling Commission. She is currently a member of the International Whaling Commission's Scientific Committee and the North Pacific Research Board's Science Advisory Panel and worked on the Polar Bear Technical Committee in 2009.

The 2009–2010 *Report on Goals and Objectives for Arctic Research* is in the final stages of review. The report, which is published biennially, calls for research efforts in five broad categories: environmental change of the Arctic Ocean and Bering Sea; arctic human health; civil infrastructure; natural resource assessment and Earth science; and indigenous languages, identities, and cultures.

The report also calls for greater inter-agency efforts to coordinate and collaborate on arctic research programs, greater federal financial support of scientific research conducted by academia and non-profits, and means to capitalize and support the ongoing costs of infrastructure (icebreakers,

laboratories, satellites, observatories, networks, sensors, and autonomous vehicles) necessary to conduct arctic research.

The report will be used by the Inter-agency Arctic Research Policy Committee (IARPC), which is led by NSF and consists of representatives of 15 federal agencies, departments, and offices, to update research priorities and the nation's five-year Arctic Research Program Plan. When finalized, the report will be available on the USARC website at: [www.arctic.gov](http://www.arctic.gov).

USARC was established by the Arctic Research and Policy Act of 1984. Its principal duties are to develop and recommend an integrated national arctic research policy and assist in establishing a national arctic research program plan to implement the policy. Commissioners also facilitate cooperation between the federal government, state and local governments, and other nations with respect to arctic research, both basic and applied.

For more information, contact Kathy Farrow ([kfarrow@arctic.gov](mailto:kfarrow@arctic.gov)) or Cheryl Rosa ([crosa@arctic.gov](mailto:crosa@arctic.gov)). ■



Phone: 907-474-1600

Fax: 907-474-1604

[info@arcus.org](mailto:info@arcus.org)

[www.arcus.org](http://www.arcus.org)

**Executive Director:** Susan E. Fox

ARCUS is a nonprofit organization consisting of institutions organized and operated for educational, professional, or scientific purposes. Established by its member institutions in 1988 with the primary mission of strengthening arctic research, ARCUS activities are funded through an NSF cooperative agreement and grant and membership dues. ARCUS has also received sponsorship for State of the Arctic Conference activities from multiple organizations (see pages 1–2 for a complete list).

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**Editor:** Sarah Behr

**Contributors:** M. Abels, V. Alexander, B. Barnes, M. Bret-Harte, K. Creek, H. Eicken, J. Farrell, S. Fox, L. McDavid, J. Overland, V. Rachold, O. Rogne, V. Romanovsky, C. Rosa, J. Walsh, H. Wiggins.

**witness** (wit nis) *n.* 1.a. One who has heard or seen something. b. One who furnishes evidence. 2. Anything that serves as evidence; a sign. 3. An attestation to a fact, statement, or event. —*v. tr.* 1. To be present at or have personal knowledge of. 2. To provide or serve as evidence of. 3. To testify to; bear witness. —*intr.* To furnish or serve as evidence; testify. [Middle English *witnes(se)*, Old English *witnes*, witness, knowledge, from *wit*, knowledge, wit.]

## A Note From the ARCUS Executive Director

# Witness the Arctic Editor Alison York Joins UAF's Center for Alaska Native Health Research

After 12 years of service, Alison York has left ARCUS for a position at the University of Alaska Fairbanks (UAF) Center for Alaska Native Health Research (CANHR). Alison served as *Witness the Arctic* editor since 1998, investigating a wide range of arctic research issues and initiatives and working closely with the research community. While employing her breadth of scientific expertise, Alison played a critical role in newsletter content and development during her tenure.

In December 2009, Alison accepted a position with UAF's CANHR, which, along with eight other institutions, is building and implementing a national research resource discovery network proto-

type. Alison will be working with biomedical investigators to inventory their research resources and helping develop a system for the resources to be searched and shared.

Alison earned a Ph.D. in zoology from the University of California Berkeley in 1990; her research interests are in comparative neuroanatomy and behavior.

ARCUS would like to thank Alison for many years of hard work and wish her well in her new endeavors.

Questions regarding *Witness the Arctic* can be directed to Kristina Creek, Executive Coordinator at ARCUS ([creek@arcus.org](mailto:creek@arcus.org)). You can contact Alison at [ayork@alaska.edu](mailto:ayork@alaska.edu). ■