Call for Abstracts - From Knowledge to Action

The IPY 2012 From Knowledge to Action Conference is now accepting abstracts. You can view the full range of the proposed conference sessions on the IPY 2012 Montreal website. All those interested are invited to submit an abstract and contribute to this conference which will provide the opportunity to address challenges, share and apply knowledge of the Polar Regions and discuss findings and solutions for adapting to global change.

The From Knowledge to Action Conference intends to bring together over 2,000 Arctic and Antarctic researchers, policy- and decision-makers and a broad range of interested parties from academia, industry, non-government, education, Arctic communities and circumpolar indigenous peoples. Together, these groups will address challenges, share and apply knowledge of the Polar Regions and discuss opportunities and solutions for adapting to global change.

Side Events & ASSW

For students and early career scientists, the Association of Polar Early Career Scientists (APECS) and the ArcticNet Student Association are working together on a career development workshop entitled From Knowledge to Careers to be held April 19-22, 2012. For more information see www.apecs.is/workshops/ipy-montreal-2012.

Planning for other events underway include a Polar Educators’ workshop, Polar Film Festival, APECS Networking event and local public events to celebrate Earth Day on April 22nd.

A number of business and side meetings are being organized in conjunction with the IPY 2012 Conference, including the Arctic Science Summit Week (ASSW) 2012 on April 20-22. During these days the IASC Working Groups (WGs) will also assemble for their annual meetings.

More information on the WG activities and contact details can be found on the IASC website www.iasc.info.

Sweden New AC Chairmanship

From 12 May 2011 Sweden is chairing the Arctic Council. In its chairmanship program, Sweden intends to focus on several issues, such as prevention of oil emissions, climate change, resilience, biodiversity and environmental protection. Concerning the peoples in the Arctic, Sweden intends to listen to the views of the Arctic indigenous peoples, focus on languages and food safety, among others.

See the Arctic Council website for more information: www.arctic-council.org
A comprehensive long-term science plan of research activities by Indian scientists in the Arctic realm was developed and presented at the 29th Meeting of the Ny-Ålesund Science Managers Committee (NySMAC) in Brest, on the 4th and 5th of November 2008. Following the presentation, India was formally approved as the newest member of NySMAC. To date, 57 scientists from India representing 18 national institutions, organizations and universities have participated in the Indian Arctic Programme, which is being co-ordinated and implemented by the National Centre for Antarctic and Ocean Research (NCAOR), an R&D wing of the Ministry of Earth Sciences.

Under the national science plan, Indian scientists have initiated the following long-term programs centered on Ny-Ålesund:

**Atmospheric Sciences**: The study of atmospheric aerosols, including the quantification of their physical and optical properties and estimating the aerosol radiative forcing over the Arctic region, form a focus area of research by the Indian atmospheric community. Efforts are underway to integrate these studies with the ongoing research by scientists from the Norwegian Polar Institute (NPI). In addition, a project on snow-pack production of carbon monoxide and its diurnal variability in the Arctic is also in progress. Earth Sciences and Glaciology: Multi-proxy geological studies are being undertaken to better understand the modern palynological analogs with reference to the dispersal, transportation and subsequent deposition of local and extra-local palynomorphs in the sediments. This work involves the collection of polleniferous material from the flowers. The plants in the Arctic region flower for a very short duration, just after the snow melts, and possess the maximum number of plants in their flowering state. Glaciological Studies: Geological studies are confined to Vestre Broggerbreen. The investigations in progress comprise snow ablation/accumulation measurements, and detailed chemical analysis of snow/ice from the glacier. Long term monitoring of the Kongsfjorden system for climate variability studies: NCAOR has recently initiated an ambitious multi-institutional program of long-term monitoring of the Kongsfjorden, deploying an ocean-atmosphere mooring with regular repeat transects to measure physical and biogeochemical parameters on a seasonal scale. A two-pronged measurement strategy has been planned to achieve the program objectives which are:

1. To collect long-term time-series data on oceanographic (currents, temperature, salinity, turbidity) meteorological (air temperature, winds, pressure, humidity, rain/snow fall, solar radiation) and biological parameters (PAR, $O_2$, fluorescence) through deploying an ocean-atmosphere mooring.
2. Repeat transects, covering the three seasonal transitions per year, to monitor the variability in the physical and biogeochemical parameters on an intra-seasonal to inter-annual time scale.

**PUBLICATIONS**

The present focus of the Austrian Arctic research is mainly on subjects of natural sciences, such as glacier changes and climate in NE-Greenland and Svalbard (University Innsbruck and Central Institute of Meteorology and Geodynamics), carbon release from cryoturbated soils (University Vienna), aerosol and gas composition of the Arctic troposphere (University Innsbruck), vegetation ecology (University Vienna), microbial communities and microbial processes in snow, ice and atmosphere (University Innsbruck) and changes of glaciers and ice caps in the Russian High Arctic (Joanneum Research Graz). Additionally, Austrian Arctic research also has a component of social sciences including studies on the changing living conditions of indigenous people of the Arctic (University Vienna, Working group Arctic - Subarctic), as well as a component of polar history (University Vienna, Austrian Academy of Sciences).

Austrian Polar Research Institute

Austrian polar research, currently spread over several universities and research institutions, will be restructured and organized in the future within the Austrian Polar Research Institute (APRI). APRI aims to represent the Austrian polar research at an international level (e.g. memberships in international scientific organizations) and will push forward Austrian polar research in general. Young polar scientists support is subject to the Austrian Polar Society's new Julius Payer stipends. Within the framework of the IPY 2007-08, Austria established new cooperation with the Danish Polar Center (now Aarhus University) for focused research in the Zackenberg Station area (NE-Greenland).

Being a member of European Polar Board, Austria participated in the ESF PolarClimate Programme. From the total number of 6 projects funded within PolarClimate, one is coordinated by an Austrian scientist (CryoCarb) and one is with Austrian partnerships (SvalGlac). Thus, Austria is starting in a new era of well-structured and internationally linked Arctic research.
At the end of the last century, with the political thaw and later political changes in Central and Eastern Europe, Czech polar research activities flourished. Several expeditions to various parts of the Arctic have been organized by Masaryk University in Brno, the University of South Bohemia in České Budějovice and the Czechoslovak (later as separate Czech and Slovak Academies) Academy of Science. At that time, several climatologists, limnologists, geologists, microbiologists, botanists and zoologists had a chance to work in the Arctic as members of international projects (Norway – Czech, Poland, UK and Japan). The Svalbard archipelago was the main locality where the research took place.

In addition, various research teams have been associated with the Abisko research station in subarctic Sweden as well as other localities, for example Siberia. The Abisko Mountains locality has been used as part of a comparative ecological study along with the upper parts of the North Bohemian and Moravian Sudeten Mountains (Giant, Jeseníky Mountains). In the meantime, Antarctic research activities also developed. Several projects were performed in maritime and continental Antarctica in collaboration with Polish and Belgian stations. Finally, in 2006, the Czech research station J.G. Mendel, on James Ross Island, north-eastern part of the Antarctic Peninsula, was opened. In 2007, the Czech Republic participated in several programs which were prepared under the auspices of the International Polar Year (IPY 2007 – 2008). One of them, Arctic climate and biological diversity, an interdisciplinary (biology and climatology) research project, was proposed as a part of the Network for ARctic Climate and Biological DIversity Studies (ARCDIV), a multidisciplinary international research initiative. The main aim of the project was to explore the diversity of both climates and ecosystems among landscapes within the Arctic region by integrating existing and new intensive measurements of key biological and physical variables and processes at multiple circum-Arctic observational sites. The project was prepared by the Norwegian Polar Institute (Dr. Jon Borre Orbak). The Czech research team (represented by three institutions – the Institute of Botany of the Academy of Sciences, the Institute of Botany of the Academy of Sciences of the Czech Republic and the Masaryk University in Brno) was invited to participate in this research initiative.

The following subjects were studied:

- Investigate biological variability – diversity - productivity parameters modified by abiotic parameters, at the same habitat sites.
- Investigate climate variability modified by physical processes in the atmo- pedo-hydro-cryosphere, on several different scales.
- Connect the physical - biological variability within landscapes to both regional and hemispheric climate circulation, with the help of mathematical models.

The Czech research team has established a small temporary research station in the central part of Svalbard (Isfjord, Billefjorden, Petuniabukta). This area was suggested because of the need to cover the central part of the Svalbard archipelago in the above mentioned ARCDIV multidisciplinary international research initiative project. At present, scientists participating in the project in collaboration with colleagues from Poznan University (Poland) are preparing a special issue of Polish Polar Research where the main results will be introduced. The research project and Czech Arctic research activities were introduced at the Arctic Science Summit Week in Bergen (2009) and Seoul (2011). In 2010, the Arctic and Antarctic research initiatives were introduced into the research infrastructure of the Czech Republic. On the basis of these recommendations, a new research project has been supported by the Czech Government: „CzechPolar – Construction and Operational Expenses“.

The aims of proposed project are: (1) construction and operation of a Czech Arctic research station in Svalbard (University of South Bohemia in České Budějovice) and (2) completion of the construction and operational expenses of the research station in the Antarctic (Masaryk University in Brno). On this basis, the University of South Bohemia, Faculty of Science, established the department “Centre for Polar Ecology”. The Centre is responsible for the operational and educational activities in Arctic ecology. At present, Centre workers, with the help of University leaders, are negotiating with Norwegian representatives about the location and technical solution of the research station. More information about the South Bohemia University Polar Centre is available at http://polar.prfjcu.cz. The Czech Republic is investing to establish regular and long-term research in various subjects of polar science and is currently
Further Research Needed to Address Uncertainties in the Arctic Cryosphere

The new assessment of the impacts of climate change on Snow, Water, Ice and Permafrost in the Arctic (SWIPA), coordinated by Arctic Council’s Arctic Monitoring and Assessment Programme (AMAP) and produced in collaboration with IASC, WCRP-CLiC and IASSA, brings together the latest scientific knowledge about the changing state of each component of the Arctic cryosphere. It follows on from the Arctic Climate Impact Assessment (ACIA), published in 2005, and aims to update the findings from ACIA and to provide more in-depth coverage of issues related to the Arctic cryosphere.

The SWIPA report presents 15 key findings on the observed and predicted changes in the cryosphere, the consequences for Arctic ecosystems and people and the impacts on global climate and sea level. The SWIPA findings document that the past six years (2005–2010) have been the warmest period ever recorded in the Arctic and that higher surface air temperatures are driving changes in the cryosphere. The related decreases in sea ice on the Arctic Ocean and in the mass of the Greenland Ice Sheet and Arctic ice caps and glaciers over the past ten years are dramatic and represent an obvious departure from the long-term patterns. The Arctic Ocean is projected to become nearly ice-free in summer within this century, likely within the next thirty to forty years. The report also clearly shows that changes in the cryosphere cause fundamental changes to the characteristics of Arctic ecosystems and impact Arctic society on many levels, including challenges but also new opportunities.

The report emphasizes that changes in the Arctic matter globally. Arctic ice loss will make a substantial contribution to global sea level change, which is projected to rise by 0.9–1.6 m by 2100. Loss of ice and snow in the Arctic enhances climate warming by increasing absorption of the sun’s energy at the surface of the planet. Overall emissions of methane and carbon dioxide from the Arctic could increase due to warming of soils and freshwater systems and thawing of ancient subsea permafrost.

SWIPA concludes that further research is needed to reduce uncertainties. Distinguishing long-term change from natural variability and detecting cryospheric responses to changing climate requires data to be collected at many locations over many years and carefully analyzed.

For more information on the project go to www.amap.no/swipa/

A Successful Congress on Social Sciences in the Arctic

The seventh International Congress of Arctic Social Sciences (ICASS) was held in the town of Akureyri, Iceland the days of 22nd – 26th of June. The theme of the conference, Circumpolar Perspectives in Global Dialogue, addressed the inter-linkage of worldwide environmental changes to the development of Arctic societies. The theme also referred to the fact that the Arctic is not just an empty wilderness with endless access to resources but an area inhabited with people that have to endure and adjust to environmental changes in their society.

The conference hosted 10 sessions with 380 lectures about emerging social and cultural issues regarding the Arctic. During the Conference, an election was made about the location of the next ICASS and the IASSA Secretariat. It was decided that the ICASS VIII will be held in 2014 in Prince George, Canada. The IASSA Secretariat will be located at University of Northern British Columbia (UNBC) in Prince George. Professor Gail Fondahl, University of Northern British Columbia, Prince George, Canada, has been elected new IASSA President for the term 2011-2014 and will take over as IASSA President September 1, 2011. Fondahl is also a vice-chair of the IASC Social and Human Sciences Working Group.

At ICASS, the Social and Human Sciences WG organized a successful roundtable on the perceptions and representation of Arctic science, held it’s annual meeting, introduced the WG activities and received a lot of input from the broad international research community represented in Iceland.

INTERNATIONAL POLAR DECADE

In June 2010 the 62nd Session of the WMO Executive Council (EC) recommended to its EC Panel on Polar Observations, Research and Services (EC-PORS) to consult with other relevant organizations to assess interest and scope out an International Polar Decade (IPD) Initiative. To support this recommendation, Roshydromet hosted a Workshop at the Arctic and Antarctic Research Institute (AARI) of Roshydromet in St. Petersburg on 14 and 15 April 2011, co-sponsored by WMO.

The workshop was well attended and represented the first multi-stakeholder consultation on the IPD initiative. The workshop was chaired by Prof. David Hik, IASC President, and Dr. Jan-Gunnar Winther, Director of the Norwegian Polar Institute. The workshop participants agreed that the next 6-12 months should be used to ensure an open dialogue with all potential stakeholders in an IPD initiative in order to better define the framework, objectives, resource requirements, timing, and organizational structure of an IPD.
The Site Survey Challenge

1-3 November 2011 | Copenhagen, Denmark

The Marine WG is organizing a workshop titled: Overcoming Barriers to Arctic Ocean Scientific Drilling: The Site Survey Challenge. The Arctic Ocean is the last essentially un-drilled, un-sampled ocean basin. Arctic deep-sea drilling is the only means to acquire paleo-oceanographic and climatic records, and constrain the tectonic history of the basin. Among other issues, the lack of adequate site survey data and appropriate age models for these data hampers the development of mature drilling proposals. The focus of the workshop is to plan site survey campaigns based on existing and planned proposals and pre-proposals that were developed as a result of the successful 2008 Magellan workshop, Arctic Ocean History: From Speculation to Reality.

IASC Council

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For more information about these and other IASC Working Group activities, please visit the IASC website at www.iasc.info