



INTERNATIONAL POLAR YEAR 2007-2008

DRAFT EDUCATION & OUTREACH POSITION PAPER

The ICSU IPY 2007-2008 Planning Group

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I. Introduction to the International Polar Year

The concept of the International Polar Year 2007-2008 is of an international program of coordinated, interdisciplinary scientific research and observations in the Earth's polar regions to explore new scientific frontiers, to deepen our understanding of polar processes and their global linkages, to increase our ability to detect changes, to more fully involve arctic residents with research activities, to attract and develop the next generation of polar scientists, engineers and logistics experts, and to capture the interest of schoolchildren, the public and decision-makers.

The IPY will include a broad range of activities organized around a select number of scientific and outreach themes. Overall, the IPY seeks to foster new observations and research, exploiting innovative, modern technology, whilst building on and enhancing polar initiatives already planned or underway.

The official period of the IPY will be from March 1, 2007 until March 1, 2009 to allow observations during all seasons, and the possibility of two summer field seasons in each polar region. The geographic focus will extend over latitudes from approximately 60 ° to the pole, both north and south. The aim is to establish a manageable and feasible number of core activities, within a much broader set of associated initiatives.

II. Overview and Objectives of an Education and Outreach Plan

The mission for the outreach ~~part plan~~ of IPY is

- *to attract and develop the next generation of polar scientists, engineers and leaders*
- *to capture the interest of the public and decision-makers.*

~~The ICSU~~The ICSU IPY 2007-2008 Planning ~~Group was~~Group was asked to develop a plan to work with government officials, researchers, educators, media reporters, writers, and the public to increase the knowledge on the polar regions and the Polar Year and also to establish a way to interact with other parties also promoting IPY, such as IPY National Committees, polar organizations, foundations etc. The Outreach plan also shall provide a channel for people living in the Polar Regions having a dialog with the Polar Science Community on research in the Arctic.

The goal for the plan is

- (i) Keep communications activities focused and on target;

(ii) Provide the basis for the decisions needed to implement an Education & Outreach plan.

The basis concept for IPY is research and a deeper understanding of the ~~polar regions~~Polar Regions as expressed in the science plan.

It is however also a major goal to increase the awareness of IPY and make the poles known to people outside the poles whom to day knows very little or nothing about the poles, and to raise the level of interest and knowledge for already interested people.

The key question is: “Why is the polar regions and polar research important to all people on earth”? The answer to this question should be known after the International Polar Year.

An improved understanding of the importance of the poles will involve many different scientific disciplines and support in Polar research.

The Northern residents engagement is central. IPY is an opportunity for people living in the Arctic to strengthen the communication with the rest of the world and an opportunity to increase the level of knowledge and education where needed.

Science influences public policy. A public understanding of circumstances and needs for research together with an understanding of the results is important in all societies. Polar research is appealing and using the Polar Year to stimulate the general interest for science in the community.

Good communications lies in understanding the means by which an individual or organization can concisely and effectively communicate its message to its targeted audience and provoke the desired response / achieve the desired outcome. The first step in this process is to identify these target audiences-

IPY Education and Outreach has six primary, sometimes overlapping constituencies:

- **The scientific/research community,**
- **Young and potential new polar researchers,**
- **The pre-university education community,**
- **Arctic communities,**
- **The general public**
- **Decision-makers.**

The IPY Education and Outreach implementation intends to address each of these audiences:

For each constituency the communication should take in consideration:

- The aim of the activity,
- What to achieve,
- How to communicate,
- What to communicate,

- The right way, the right time, the ~~right place~~right places.

The Goals

The ~~scientific/research~~scientific research community

- To promote polar research within the scientific community -with special awareness to incorporate scientists living in the arctic area in the process.
To promote polar research as a possibility to demonstrate and build inter-disciplinary or bipolar links.

Some countries have well established polar research communities, but for many countries the research is more scattered. The possibility to extend the involvement in Polar research to a “wider” research community with ~~from~~ both existing and “new” polar “researchers should be used, inclusive -increased awareness of IPY possibilities amongst ICSU and WMO (member states and organizations)

Polar research has a potential to demonstrate and build on inter-disciplinary or bipolar links, which should be used.

The importance of including the outreach part in research projects related to IPY should be communicated. For many research projects not only the results, but also the process is exiting and have a general interest.

The huge polar areas with relatively scattered populations means that many researchers from outside the polar areas are working there. This should be used as an opportunity for communication with and involvement of researchers living in the Arctic areas.

Young and potential new polar researchers

- Help to recruit new and future research scientists and collaborators, and to increase awareness of polar issues at post-secondary educational institutions and research institutions.

Stimulating young people to science is a generic wish, and polar science is excellent for this purpose. The aim of recruitment and information should take into consideration the differences between people living inside and outside the polar areas and make an effort to increase the dialog between the sides and between researchers and residents.

The information should also be aware of differences in sciences - natural science – humanities – social sciences – traditional knowledge traditions and aim for a holistic understanding.

Some stimulating international effort such as IPY- PhD and post doc stipends should be established. An effort and strategy to use already established programs like the Fulbright and others should be promoted through IPY to develop the next generation of researchers including participation from Arctic residents.

The pre-university education community

- To increase the awareness and understanding of polar issues within the pre-university-community and to help infuse learning and create interest for science with the excitement of discovery of the ~~polar regions~~Polar Regions.

The national engagement in education activities at pre-university level is important because of differences in methodologies in different nations, but some initiatives could be developed to an international level.

Many of the existing partner/stakeholder/organizations have outreach skills, which should be used as well as the possibilities to turn already existing programs and initiatives in a polar direction.

It is particular important to engage the education community among people far away from the poles with nearly no relationship to the Polar Regions using the International Polar Year as a special opportunity to raise the awareness in these community.

The undergraduate level is a highly important constituent to initiate the interest for Poles and this has to be ~~follow~~following through to graduate, doc, to post-doc and PI level.

The advantages of involving people living in the Arctic for education purposes is clear should be acknowledged and initiated. Use of modern web based technology for remote participation and interactive programs – translates to genuine learning experiences for people of all ages. Further, a special effort could be made to increase the opportunities for pre-university teachers to participate in research fieldwork and thereby inspire their audience at home.

Arctic communities

- To strengthen dialogue and links between Arctic communities and the research community in general and increase understanding of the research goals and possibilities for using the outcome of the results

The huge polar areas with relatively scattered populations means researchers from outside are working in the area as well as researchers who live in the Arctic.

The Arctic Council is a forum with participation from many observers and the eight Arctic countries. Therefore the Council should have a leading role in fulfilling the goal of strengthening the dialogue and links between the Arctic and the research communities.

The general public

- To promote polar research to the general public and helping make the public more aware, excited, and supportive of polar issues including understanding “Why is the Polar Regions and Polar research important to all people on earth”?

The main target groups are people living outside the polar areas but tourists visiting polar areas and Arctic residents should also be reached through existing information

centers with the goal of increasing the understanding of the poles and understanding of the role of ~~the poles~~ the poles in a global perspective. The International Polar Year should be used as a special opportunity to raise the awareness among people far away from the poles with nearly no relationship to the regions.

Many different methods and tools can be used to attain this goal.

Experiences and involvement from established scientific information centers where some already are committed to polar issues should be used, and a network of polar reporters, artists, authors, film producers should be created.

Decision-makers

- To inform ~~politicians and other~~ decision ~~makers~~ makers: parliamentarians, legislators, policy makers and other organizations on the role and the importance on the ~~polar regions~~ Polar Regions.
- To inform research activity decision makers (science and environment ministers, Research Foundations, University leaders)

The decision makers are mainly politicians, but also include the very important category of high-ranking officials, who can influence the amount of funding for IPY. They have to be reached very early in the process to get the financial support for IPY.

Their needs are informative information with description of activity and/or programme accompanied by an explanation of its relevance on which they can base policy and economic decisions

~~-This is mainly a national or regional~~ responsibility is mainly a national or regional, although any international material supporting this outreach-activity would be very valuable.

The audiences constituting parliamentarians, legislators and policy makers is also part of the larger audience, that of the 'media /general public'. Thus, efforts and strategies devised for media relations and the general public will also contribute to the more specialized audiences, including parliamentarians.

III. Coordination of the international effort for Education and Outreach

It is important to create a mechanism organizing a network in between the IPY-planning community, the existing international and national polar organizations, experienced communicators and professionals for inspiration and cooperation on a bi- or multilateral basis. An agreed communications framework will enable the many different participating organizations to achieve the Vision, Values and Mission of the International Polar Year. The framework can be adapted to fit business, language and cultural needs of each participant while retaining clear direction, identity and 'voice' for IPY.

The International Polar Year national planning groups and international agency planning groups will organize various Education and Outreach projects, but use of existent outreach and education networks and organizations is essential because of experiences and limited time.

While some groups already are well advanced in their education and outreach plans, there will still be a need for a central office or committee (here called *The E&O Committee*) to assist in the coordination of such activities, creating guidelines for activities and serve as a meeting place for exchange of ideas and help to national IPY - committees. *The E&O ~~Committee should~~ Committee should* also assure, that some international "core projects" have designated an O&E person in the project to use E&O opportunities.

The E&O Committee should be closely connected to the international IPY Jointorganizing Cecommittee. *The E&O Committee* shall link specialized education and communication people (researchers/educators/community representatives and public officials) including Arctic ~~Council~~ asCouncil as well as ~~countryas country~~ institutions/ centres dedicated to polar science information.

Ministers of Education and Science and other representatives from the Arctic Council Member States recently (June 2004) declared to make full use of the opportunities offered by the International Polar Year in 2007 – 2008, in an effort to foster joint education and research including the areas of social and economic development, as they pertain to sustainable development. The IPY Education and Outreach implementation plan shall incorporate this effort and seek cooperation.

The goal to promote polar research and understanding of the poles to the general public and decision-makers in part can utilize several different media and information channels such as polar reporters, artists, authors, film producers, exhibitions, events-. Selecting the media by which the various communications efforts will be implemented is specific to each audience and crucial to achieving the desired outcome.

-Outreach will also create and maintain direct links to education communities.

Outreach should span the polar year, beginning before field expeditions, communicating from the field and disseminating research results after the conclusion of the polar year. Communication on how and why to do research in Polar Regions is often as important as the actual result! Current technology makes real-time outreach of research activities possible through internet with real-time, GPS- locations of all researchers and vessels, live webcasts from the field, email, etc.

The E&O committee.

The E&O committee could have several key tasks. Some of these are:

- ❖ Serve as a central info service & knowledge focal point and ~~to~~ develop a strategy to implement a coordinated communications framework.
- ❖ -A main Education and Outreach web site could list and describe all IPY education and outreach activities. This web page could be an important first link for the media. It would

also be an important source of information for national and international agencies looking for possible education and outreach activities.

- ❖ Produce an electronic newsletter emailed to appropriate audiences as well as made available on the web and can be printed on demand. It should include feature articles on IPY-activities and major issues, details of upcoming conferences and meetings, highlights from fieldwork, etc., and be published quarterly. It could contain, as a space for National Committees and organizations to communicate their own messages as a feedback mechanism as well as being a conduit for two-way dialogue.
- ❖ Brochures and Pamphlets with brief text and accompanied by images and web addresses for those who would like more information

- ❖ Promote education and outreach activities among national and international agencies through meetings, newsletters, and help establishing networks.
The national level of education activities at pre-university level is important because of differences in systems and methodologies in different nations.
Each nation's E&O plan could build on existing national programs and initiatives turned towards the poles (Odyssey on mind ship; travelling "road" show) identified through national contacts.
Some initiatives could be developed into an international effort coordinated through the *E&O committee*.

- ❖ Encourage each IPY activity to organize its own E&O component activity with a liaison to *The E&O committee*, and therefore publish (simple) guidelines for them to follow (standards, protocols, persuasion and consensus on what outreach activities are made in the name of IPY).

- ❖ Decide an IPY 'brand' including a logo to focus the international science community and to succeed in raising global awareness within society in general. A 'brand' image can strengthen internal and external communication as well as present a professional consistency for publications/reports/web/media etc.

- ❖ Identify existing professional science communication networks within participating partners/countries

- ❖ Examine potential research projects and develop suggested education and outreach possibilities for these projects.

- ❖ Identify and seek funding possibilities for international E&O activities. Some resources of all larger projects should be asked to allocate a sizeable part of their resources to bi-polar and circumpolar coordinated outreach. Such activity could be coordinated by *the E&O committee* but implemented by different agencies etc.

- ❖ Help coordinate international education and outreach endeavors.

Many national agencies may be conducting activities complementary to each other. Great education and outreach potential could be gained by bringing these activities together into international activities.

Action Matrix

<u>Targeted Audience</u>	<u>Medium/Methods</u>	<u>Desired Outcome / Goal</u>
<u>(i) Scientific Research Community</u>	<u>Programme/Project Brochure</u> <u>-Newsletter</u> <u>-Websites</u> <u>-Exhibits at meetings and symposia</u> <u>-Workshops</u>	<u>-Raise awareness and interest (ensure that the IPY activities are actively promoted at all levels.</u> <u>-Attract expertise to develop and implement IPY projects</u> <u>-From start include outreach part in research projects related to IPY.</u> <u>Attract cooperation. Involve national research facilities in IPY programmes; provide funding at the national and international level;</u>
<u>(ii) Young and potential new polar researchers</u>	<u>Programme/Project Brochure</u> <u>-Newsletter</u> <u>-Websites</u> <u>-Exhibits at meetings and symposia</u> <u>- PhD networks and w PhD workshops</u> <u>IPY- PhD and post doc stipends</u>	<u>Recruit new and future research scientists and collaborators.</u> <u>Increase awareness of polar issues at post-secondary educational institutions and research institutions</u>
<u>(iii) The pre-university education community.</u>	<u>- Direct Contact / Establish a focal point</u> <u>- Use existing programs and initiatives</u> <u>- Include polar themes in science and history contests/programs</u> <u>- Use modern web based technology for remote participation and interactive programs</u> <u>- Newsletter</u> <u>- Websites</u> <u>- Train the trainer' kits</u> <u>- Training workshops</u>	<u>Increased awareness and understanding of polar issues by learning with the excitement of discovery of the polar regions.</u> <u>Use people living in the Arctic for education</u> <u>Create the foundation for future interest in science</u>
<u>(iv) Arctic communities</u>	<u>- Brochures</u> <u>- Arctic Council</u> <u>- Specialized newsletters (project level)</u> <u>- Exhibits at meetings and symposia</u>	<u>Strengthen dialogue and links between Arctic communities and the research community</u> <u>Increase understanding of the research goals and possibilities for using the outcome of the results</u> <u>Build capacity</u>

<u>(v)</u> <u>The general public including media</u>	<u>-Advisories of IPY activities and meetings</u> <u>-Raise media profile of important meetings/event (press releases, media invites and advisories)</u> <u>- Create/contact network of polar reporters, artists, authors, film producers.</u> <u>- web site, press, TV, museums, zoos, books and stamps.</u> <u>- Special events, exhibition and competitions.</u> <u>- Targeted information material like CDs, DVDs, video</u>	<u>-Increase awareness in the general public and create support for IPY activities and programmes</u> <u>- _____</u> <u>Promote polar research and make the public to understand “Why is the Polar Regions and Polar research important to all people on earth”?</u> <u>- _____</u>
<u>(vi) Decision Makers</u>	<u>-Brochure</u> <u>-Meetings</u> <u>-Newsletter</u> <u>-Websites</u> <u>-Develop a target list</u> <u>-as general public</u> <u>- _____</u>	<u>-Increased awareness and foment support of IPY activities</u> <u>-Influence policy, and decision-making with respect to IPY activities.</u> <u>Increase financial support of IPY activities</u> <u>- _____</u> <u>Increase partnerships between IPY and the private sector</u>

IV. Potential Education and Outreach

The list is examples on possible activities and action.

The activities can be implemented by different players such as national IPY –Committees or already establish networks and international organizations, reporters, authors, artists, film producers with polar interest, government officials, researchers and sponsors

The tools for outreach and education are different such as web site, press, TV, museums, zoos, books and stamps.

Targeted information material like CDs, DVDs, video and activities as special events, exhibitions at and competitions.

Ideas for national and international organization to do

1. Awareness of IPY

- i. All IPY- active organizations are encouraged to carry an IPY logo.
- ii. *The E&O committee* establish a list of experts in institutions available for media events
- iii. Have IPY events organized in our member institutions and their communities
- iv. Have our member institutions “host” IPY events
- v. Assist in the production of promotional material

- vi. Create an international secretariat for Arctic education and outreach for the IPY or establish a structure to help coordinate the education and outreach activities of the eight Arctic countries

2. Education

- i. Generate polar emphasis in existing science/environmental programs
- ii. Include polar themes in science and history contests/programs
- iii. International polar day at schools around the globe
- iv. Make course material available to IPY, for example a special online-3 weeks training session for fresh researchers about the Arctic based on University of Arctic “Bachelor of Circumpolar Studies”
- v. A traveling road show”
- vi. Make field courses available to journalists.
- vii. Coordinate web-events such as on-line conferences/presentations/community festivals
- viii. There is a need for international collaborative research projects – especially those dealing with the social sciences – UArctic may play a role in this.
- ix. Teachers colleges in the Arctic are encouraged to organize curriculum projects based on IPY projects, activities and results.
- x. Ask the teachers colleges at member institutions to organize web casts involving Arctic schoolchildren.
- xi. PhD networks in the Arctic developed to promote opportunities for young researchers.
- xii. Promote development of Arctic field courses for master and PhD students open to students from all relevant instructions.
- xiii. Coordinate community and school groups making modern collections analogous to the 1881-1883 Murdoch and Ray collection.
- xiv. Summer schools, etc).

3. Outreach

- i. Link with national media and science channels
- ii. Link with national digital libraries
- iii. Circumpolar music festivals
- iv. Polar art festivals and traveling circumpolar art show
- v. Coordinate teams of international researchers to put together traveling museum displays
- vi. University. of the Arctic could coordinate special “open” university courses especially designed for those outside the region.

About: University of the Arctic

In order to promote the development of education and outreach initiatives among national and international agencies, it is useful to take one such agency as an example. The University of the Arctic is a consortium representing 70 plus Northern post-secondary institutions and indigenous peoples organizations in all eight Arctic nations. Originally a project of the Arctic Council, it came into being officially in 2001. It runs several programs. Most notable are the Bachelor of Circumpolar Studies, the north2north mobility program, a Ph.D. network, and a series of field schools. In planning for the IPY, the University of the Arctic will have higher education and northern universities and colleges as its focus. It would also serve as an important link to Arctic communities.

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