SCAR/IASC Open Science Conference

"Polar Research – Arctic and Antarctic Perspectives in the International Polar Year"

St. Petersburg, Russia
July, 2008

INTERNATIONAL SCIENTIFIC ORGANIZING COMMITTEE
STATUS REPORT – 6/4/07

The initial phase of comment on the DRAFT 2008 SCAR/IASC Open Science Conference (OSC) Science Program has now concluded and a DRAFT Science Program is presented. It proved to be challenging to represent the diverse interests in polar science represented by SCAR, IASC, and the IPY 2007-2008 in a single three-day science program.

This phase of program development generated constructive and robust discussions about the OSC Science Program within the polar science community with input from many quarters. The community was widely polled for suggestions through the SCAR and IASC network of programs and national representation. The International Scientific Organizing Committee (SOC – see Appendix 1)) was provided several opportunities to comment on the DRAF T program as it evolved.

There were differences of opinion and philosophies on how to structure the program that could not always be resolved to everyone's satisfaction. However, all suggestions were given due consideration and the DRAFT Science Program incorporates the majority of the suggestions received.

ASSUMPTIONS:

A SINGLE AM or PM SESSION from 8-12 PM or 1-5 PM WITH 20 MINUTE PRESENTATIONS (with a 40 minute break) PROVIDES FOR ~10 PRESENTATIONS/SESSION. OVER 3 DAYS WITH 8 PARALLEL SESSIONS THERE ARE A POSSIBLE 480 ORAL PRESENTATIONS WITH NO DAY-TIME FOR POSTERS AND A ONE HOUR LUNCH.

(FINAL OSC STRUCTURE YET TO BE AGREED)

OSC SCIENCE PROGRAM CONTENT

The current Draft OSC Science Program reflects the following revision:

1) A reduction in themes from 6 to 5. The IPY themes **"**Status" and "Change" were combined into a single theme to avoid duplication and confusion. These two topics are closely coupled and often indistinguishable. These "combined sessions" will more than

likely attract enough abstracts to populate multiple sessions. Other issues related to major themes included:

a) **How is "Vantage Point" interpreted?** One view is that this session should be outward looking – beyond earth - while a broader interpretation suggests any use of Antarctica for observations infers a "polar vantage point". Depending on definition this session may need to be reorganized and earth bound observations placed in a separate theme.
b) **Should Education and Public Outreach be assigned a special thematic session?** A large number of IPY efforts are directed at education and public outreach, should this be recognized in the OSC program organization?
c) **Should there be a thematic session - "Towards an IPY Legacy"?** One view is that it is too early to discuss legacies and a counter opinion is that a basis for legacies must be part of current planning and not an afterthought, i.e., data repositories (archiving, accessibility), observing systems, infrastructure, etc.
d) **Does Polar History deserve a more prominent place in the program?** It is SCAR's 50th birthday, a book on the history of SCAR is being produced, SCAR's history group has been in existence for 4 years and there are many potential Arctic contributions.

2) A reduction in sub-themes from 48 to 35. Redundant or overlapping sessions were combined. In contrast, broad sub-themes were broken into more than one session. As noted above, this may or may not reduce concurrent sessions since some **sub-themes will most likely need multiple session**s to accommodate all of the high quality submissions.

3) Joint Session labels have been removed. For simplicity in presenting the OSC Science Program, co-sponsorships labels are not included. Once SCAR and IASC discuss the suggestion for joint sessions these can be restored as desired.

4) 9 of 35 (25%) sessions are related to Human Dimensions. While the human dimension sessions are primarily grouped under one theme, this does not necessarily reflect how they will be scheduled during the conference. Themes will be scheduled throughout the three days of concurrent sessions intermingling topics and avoiding scheduling conflicts.

5) 5 of 35 (14%) Sessions are "General Sessions". These sessions are intended to capture submissions that are outside of the topical sessions in the name of openness.

6) "IPY Urgencies" were incorporated into the titles of sessions where appropriate and used to organize topics.

7) Sessions descriptions have been revised. To simplify the mix of topics under sub-themes disparate topics were eliminated to avoid confusion and clearly identify the most relevant topics.

OSC SCIENCE PROGRAM STRUCTURE

In addition to the items above, discussions also identified a number of issues related to the program structure, organization, and general concepts that should be considered as the OSC program evolves. The issues identified include (see general comments below):

- **Keynotes and Chairs are mainly male, anglo, and western and northern hemisphere**. The lists provided are compilations of what was submitted, the issue of balance (gender, country of origin, etc.) should be considered by SCAR and IASC and potential solutions discussed.

- **Multiple Chairs are often listed.** In many cases multiple Chairs are listed because of the need for more choices, there may be multiple sessions under one theme, and balance issues have not been resolved - gender, country, N/S Pole, etc. Suggested invited speakers in many cases should also be considered for Chairs.

- **Session Chairs should select who and how many invited speakers** to have in their session. All of the suggestions for invited speakers have been compiled. The lists are rather long in many cases. These lists will be provided to Session Chairs as input but it is suggested that Chairs are better placed to make decisions on who to invite based on their knowledge of their community.

- **Abstract Review** – The members of the SOC will be assigned to each session (revised once the program is agreed). The SOC representatives will assist in abstract review. Session Chairs will also be asked to assist in reviews as well as other members of the SOC as needed. Reviewer anonymity will be preserved.

- **Level and type of Early Career Scientist participation?** See APEC Paper

- **Reduce oral presentations to 20 minutes?**

- **What is the optimum number of invited speakers per session?**

- **A Committee is needed to develop an effective plan for the Poster Sessions.**

- **Should there be Early Career Researcher Keynotes?**

- **"Name" the Keynote Lectures (see general comments below)**

- **Fund Keynote Travel?**

- **Is it useful to have Joint Sessions with other polar organizations?** If so, official consent for joint sessions? By whom?
    - CCAMLR
    - IAATO
    - CLiC

  - ASOB
  - SCOR
  - IOC
  - IASSA
  - IPA
- **Are host country selections for Session Chairs effectively incorporated?**

- **Who issues invitations to Chairs?**

- **Who issues invitations to the Keynote Speakers –Presidents of SCAR/IASC?**

- **Must have an on-line abstract submission and review process**, abstracts must be identified to the theme and sub-theme by the authors for ease of sorting and review.

GENERAL COMMENTS

Some contributors provided comments that framed a particular issue and these comments are provided verbatim for the further discussion.

Collective - Meeting Objectives:

- Bring Arctic and Antarctic communities together for an open international scientific conference
- Build interdisciplinary links within the polar research community
- Highlight major breakthroughs in polar science
- Showcase SCAR and IASC contributions to IPY objectives
- Inspire and help develop the next generation of polar scientists
- Aid the planning of new SCAR and IASC programs
- Inform the community of the breadth of IPY research
- Publicize the activities of SCAR and IASC and bring them to the attention of politicians, the media and the public

M. Kennicutt – 3/28/07 - named Lectures like the AGU. They are often the highlights of the meeting, well attended (usually overflow), appeal to a broad audience, and an additional avenue for recognition both for the "honoree" (usually deceased) and the yearly Lecturer who can put it on their resume. Maybe we could at least name our opening OSC Keynote for someone famous as a 50th Anniversary activity (there is usually a short review of the honoree's accomplishment and the talk is some outgrowth of the foundations set by the honoree).

TO HONOUR EARLY SCIENTIFIC INVESTIGATIONS WE COULD HAVE FOR EXAMPLE, ONE, TWO, OR ALL OF:

- *THE SCOTT LECTURE (UK)*

- *THE BYRD LECTURE (USA)*
- *THE CHRISTENSEN LECTURE (NORWAY)*
- *THE BELLINGSHAUSEN LECTURE (RUSSIA)*
- *THE CHARCOT LECTURE (FRANCE)*
- *THE NORDENSKJOLD LECTURE (SWEDEN)*
- *THE MAWSON LECTURE (AUSTRALIA)*
- *THE DRYGALSKI LECTURE (GERMANY)*

SPANISH SPEAKERS?

PEOPLE ACTIVE IN THE IGY

- *THE FUCHS LECTURE (IN GLACIOLOGY)*
- *THE LORIUS LECTURE (IN GEOSCIENCE)*
- *THE KNOX LECTURE (IN BIOLOGY)*
- *RUTFORD (?)*

I Allison -

- *THE KOTLYAKOV LECTURE (IN GLACIOLOGY)*
- *THE LORIUS LECTURE (IN CLIMATE SCIENCE)*
- *THE BENTLEY LECTURE (IN GEOSCIENCE)*
- *THE KUSUNOKI LECTURE (IN SEA ICE/OCEANOGRAPHY)*
- *THE KNOX LECTURE (IN BIOLOGY)*

PC Covey – Travel funding for Keynotes and other invitees?

WE DO NOT NORMALLY FUND KEYNOTE SPEAKERS. BUT WE COULD OFFER PARTIAL ASSISTANCE – E.G. HALF AN AIRFARE SAY?

D Futterer - The general structure of the OSC in using the IPY Themes has been agreed upon but it has been as well accepted to keep the meeting open as a real "Open Science Conference". However, going thematically into more details it becomes obvious very soon that a separate handling – for example – of themes 01-STATUS and 02 CHANGE would not be a very elegant action if taken too precisely. There are similar arguments for "ice" and other subthemes/topics. This does not need any correction at the moment but it will become more important once the final program will be arranged.

The initial program draft contained a number of "Joint Sessions" beside SCAR / IASC and IPY naming ASOB, SCOR, IASSA, IPA, IOC, CCAMLR, IAATO, CliC etc.! . I

have deleted all those acronyms simply by a number of arguments but mainly: (i) not to confuse colleagues, (ii) not to foster "separation".

The official invitation should contain a clear description that this meeting is "The SCAR/IASC Open Science Conference" and the first major meeting presenting new results of the "International Polar Year"! In the following all – in IPY and/or in the meeting – participating and by this contributing "Bodies" (Societies, Unions, Institutions etc.) should be named and briefly described.

Barry Goodison - I think you need to give yourself some flexibility here as some research will not be fully in gear until 2008, especially in the Arctic. In the US, funding reviews continue. In Canada, projects are just gearing up and some will have a field season, while others will just be in full gear next summer. In Denmark, some of the Greenland ice coring will just be starting. This is not to make excuses, but just to suggest you may want to look at your wording in the call so that people don't figure that their work is (not) ready for presentation at that time.

I would also like to make a suggestion on the structure. The six themes are good for focusing the research, but not ideally suited for Earth System Science or integrated science, which is something I believe you are trying to accomplish with this conference. I found the four key issues for polar research laid out in the IPY scope of science document to be a compelling way of addressing IPY science. The topics of Shrinking Snow and Ice: Rapid Change in Polar regions; Global Linkages: Interactions between the Poles and the Rest of the earth; Neighbours in the North; and, a Sense of discovery would allow the current topics to be included easily. An additional topic on Polar Observations: Past, Present and Future would also complement the above (topic 5 of current themes). One reason for this is that I think it is often difficult to separate current status from change - yes there can be different time scales, but the current status is commonly referenced to past and future changes.

Barry Smitt - the Draft outline grossly under-represents the human dimensions of IPY. The IPY Framework Document (description of Themes) has human dimensions issues in every one of the 6 themes. It is surprising that this Draft program does not reflect that feature of the IPY. Other than the single item in Section 2 (2.2), the human/social science aspects are included only in Section 6. It is disappointing, given the intent of this IPY to promote incorporation of social science and to facilitate multi-disciplinary work, that there is little recognition (in the Draft) of the work that integrates natural science and social science in documenting status, understanding environmental and human changes, advancing our understanding of interactions, investigation unkowns at the frontiers of (natural and social) science, as well as investigating the cultural, social and historical processes.....Putting all the human dimensions (social science) work in a section separate from the natural science work, misses opportunities to demonstrate the integrative science, and does not do justice to the rationale and original themes of IPY.

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KEYNOTE NOMINEES

The SOC decided provides the following list of Keynote nominees. A broad discussion of balance and coverage is needed in order to agree on the final list of Keynote speaker invitees.

Status

1. **Arctic** - Mark C **Serreze**, Marika Holland Juliene Stoeve, Cooperative Institute for research in Environmental Sciences, National Snow and Ice Data Center, University of Colorado, **Arctic Sea Ice Cover** (Science) - **US**
2. **Arctic** - Kathy S. **Law** and Andreas Stihl, Service d'Aeronomie, CNRS, IPSL/Universitie Pierre et Marie Curie, **Arctic Air Pollutants** (Science) - **FRA**
3. **Antarctic(Arctic)** - Susa**n Solomon, IPCC Report - Polar Prespectives** (Kennicutt); Susan **Solomon - Integrating Antarctica into the IPCC;** Susan **Solomon - Climate change, impacts and vulnerability in polar regions** (relevant parts of IPCC AR4 WG1 and WG2)
4. **Bipolar** - Kevin **Gaston** , **Macroecology (the science of wide scale biology)**, John Gray or Carlo Heip
5. **Bipolar** – Peter Lemke, **The role of the polar areas in the global climate system.**

Change

6. **Bipolar** - James **Hansen**, Director of NASA's Goddard Institute for Space Studies, New York, **Climate Change** (Summerhayes) - **US**
7. **Antarctic (Arctic)** - Alan **Shephard** and Duncan Wingham, Centre for Polar Observations and Modeling School of Geosciences, University of Edinburgh, **Ice sheet Contributions to Sea Level Rise** (Science) - **UK**
8. **Arctic** - John **Walsh**, University of Alaska Fairbanks, **Arctic Climate Change** (Kennicutt) – **US**
9. **Bipolar** - Richard **Alley,** Penn State University, **Abrupt Climate Change – US**
10. **Bipolar** - Isabella **Velicogna - GRACE gravity satellite estimates of the mass balance of Antarctica and Greenland**
11. **Antarctic** - Ian **Dalziel -Change: Antarctica in the global earth system**
12. **Antarctic** - Tim **Naish** or Ross **Powell - ANDRILL, results and relevance to future climate change,**
13. **Antarctica –** Hein de **Baar – Southern Ocean biogeochemical cycles under a changing climate**

14. **Antarctica –** Uli **Bathmann – Southern Ocean ecosystems under a changing climate.**
15. **Arctic –**Ursula **Schauer and** Bert **Rudels –** The response of the Arctic Ocean water masses and circulation to climate change.

Links

16. **Antarctic** - John **Croxall**, **Conservation and Southern Ocean Exploitation**
17. **Bipolar** - Chris **Rapley** or Odd **Rogne** - **Polar Science in the Post-IPY Era**
18. **Bipolar –** Rainer **Gersonde – the Bipolar Climate Machinery**
19. **Bipolar** - Dorthe **Dahl Jensen** - **Ice core climate records from Antarctica and Greenland – similarities and differences** (alt. - Hubertus Fischer)
20. **Arctic** - Cecilie **Mauritzen** - **The DAMOCLES project** (alt. JC Gascard)
21. **Bipolar** - Conjugate Studies of the Earth's magnetosphere-Nikolai Ostgaard, University of Bergen, or Matsuo, Sato-NIPR
22.

Frontiers

23. **Antarctic** - Helen **Fricker - Lakes and rivers beneath the Antarctic ice sheet: distribution and impact**
24. **Antarctic** - Robin **Bell** or Michael **Studinger** - **Frontier: The subglacial Gamburtsev Mts, an unexpored frontier**
25. **Bipolar**-Astronomy from Antarctica-Jonh Carlstrom, University of Chicago.

Observations

26. **Bipolar** - Eric **Blake - New IPY Technologies**
27. **Bipolar** - Alexander **Bedritsky**,WMO president
28. **Bipolar** - Eduard **Sarukhanian**– International Polar Year and Global Observing Systems
29. **Bipolar** - Volodya Papitashvili, PANTOS

Societies

30. **Arctic** - Bob **Corre**l - **An update on the Arctic Climate Impacts Assessment**
31. **Bipolar** - Dave **Carlso**n - **Progress within the International Polar Year**

Early Career Scientists (ECS)

32. D. Barnes (BAS) with an overview presentation on Biodiversity-Change (or similar)

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"SNAPSHOT "of the Science Program - Draft 6/1/07

1.0 STATUS AND CHANGE

- **1.1** Earth Structure and Geodynamics at the Poles
- **1.2** Polar Ocean Processes: Status and Change
- **1.3** Evolving Coastal, Near shore and Shelf Processes in the Polar Regions
- **1.4** Shrinking Snow and Ice: Rapid Change in the Polar Regions
- **1.5** Past, Present and Future Polar Climate Change
- **1.6** Meteorological Processes in the Polar Regions
- **1.7** Polar Terrestrial and Freshwater Ecosystems: Status and Change
- **1.8** Polar Marin Ecosystems: Status and Change
- **1.9** Status and Change in Cultural Heritage Sites in Polar Regions
- **1.10** Status and Change in the Polar regions –General Session

2.0 POLAR/GLOBAL LINKAGES

- **2.1** Coupled Cryosphere/Ocean/Atmosphere Systems
- **2.2** Polar/Global Biological Connections
- **2.3** The Sun's Interactions with the Earth's Atmosphere and Electromagnetic Environment
- **2.4** Human Linkages: The History of Non-indigenous Peoples in Polar Regions; Impacts and Interactions
- **2.5** Polar/Global Linkages - General Session

3.0 A SENSE OF DISCOVERY

- **3.1** Deep Sub-ice Water, Hydrological Systems and Ice sheet Interactions
- **3.2** Frontiers in Polar Biology
- **3.3** Polar Microbes, Genetics, and Molecular Biology
- **3.4** Technological Advances and Polar Exploration
- **3.5** Polar Weather and Climate Forecasting
- **3.6** Frontiers in Polar Scientific Drilling
- **3.7** A Sense of Discovery – General Session

4.0 THE POLES AS A VANTAGE POINT FOR OBSERVATIONS

- **4.1** Polar Observing Systems
- **4.2** Astronomy
- **4.3** New Ways of Looking at the Polar World
- **4.4** Variations in the Earth's Magnetic Field and Inner Core Processes
- **4.5** Accessing and Preserving Data as an IPY Legacy
- **4.6** The Poles as a Vantage Point for Observations - General Session

5.0 PEOPLE AND RESOURCES AT THE POLES

- **5.1** People and Change
- **5.2** Harvesting and Exploitation of Polar Biological Resources
- **5.3** Conservation, Tourism, and Visitor Management
- **5.4** The Role of Native Knowledge in Modern Polar Science
- **5.5** Artic and Antarctic Archaeology
- **5.6** Polar Bridges: Social Scientists and Natural Scientists Working Together
- **5.7** Institutionalization of Polar Research - The International Polar Years
- **5.8** People and Resources at the Poles– General Session

SCAR/IASC Open Science Conference
July St. Petersburg Russia
Scientific Themes

DRAFT 6/4/07

1.0 STATUS AND CHANGE – TO DETERMINE THE PRESENT STATUS AND TO QUANTIFY AND UNDERSTAND PAST AND PRESENT CHANGE TO IMPROVE PROJECTIONS OF FUTURE CHANGE

1.1 Earth Structure and Geodynamics at the Poles (topics: past and present active margin tectonics, neotectonics, short time scale – Quaternary, long time scales – Cenozoic; assembly and breakup of super-continents; the history of ocean basins and gateways, terrain evolution and accretion: crustal structure: seismicity) **(SOC Rep: Futterer and Storey)**

Possible Chairs: R Gesonde(GER), G Leichenkow (RUS) and T Wilson (US)

Possible invited speakers: S Drachey, Dalziel, R Gohl, J Thiede, R Dunbar, A Haywood, L Timokhov, S Pisarev, M Khutorsko, G Alekseev, B Storey, A Vaughan, R Trouw, P Herve, J Jacobs, F Tessensohn, G Kleinschmid, P Barrett, R Dunbar

1.2 Polar Ocean Processes – Status and Change (topics: observation and modeling of deep water physical processes, geophysical and geological processes and their interactions including large scale oceanic circulation and water mass distribution**,** small scale processes and ocean stability, impacts of changes on thermohaline circulation, atmosphere/sea-ice ocean interaction and impacts on thermohaline circulation, modelling, physical oceanography**,** coupled atmosphere/sea ice/ice shelf /ocean modeling) **(SOC Rep: Fahrbach, Loeng, and Lantuit)**

*Possible Chairs**:** N Mikkelsen (DAN),H de Baar (NETH); L Anderson, I Melnikor; U Schauer (Ger), A Klepikv (Rus), SRintoul (AUS), T Fichefeet (BEL), A Bergamasco (It), I Wainer (BRA), Z Zhang (China), J Zhou (China), E Fahrbach, K Heywood*

*Possible invited speakers:, R Stein, M Jacobsson, L Anderson, K Heywood,S Rintoul, P Schlosser**,** R Dunbar,A Proshutsinsky, N Mikkelsen, S Pisarev, I Mokhov, G Alekseev, A Bergamasco, H Hellme, A Naveira-Garabato, T Vihma, R Gerdes, B Dickson, E Pakhomov , M Meredith, K Speer, D Martinson, H Goose, R Doescher, C Mauritzen, C Mauritzen, S Osterhus, W Jokat*

1.3 Evolving Coastal, Near shore and Shelf Processes in the Polar Regions (topics – observation and modeling of coastal and slope physical processes,

coastal processes, gas hydrate, permafrost, coastal erosion, sea ice, modeling, biological responses coupled atmosphere/sea ice/ice shelf modeling) **(SOC Rep: Fahrbach, Loeng, Rachold, and Lantuit)**

*Possible Chairs**:** L Anderson, I Melnikor, H.W. Hubberten, G Cherkashov (EC:Lantuit, Overdun,Couture)*

*Possible invited speakers: H Kassens M Grigoriev, G Cherashov, R Stein, M Jacobsson, K Heywood, S Rintoul, L Anderson, J Grebmeier**,** P Schlosser**,** R Dunbar, H Eicken**,** A Proshutinsky, S Pisarev, I Mokhov, G Alekseev, S Solomon, I Semiletov, P Overduin, L Timokhov, W Pollard, St Dallimore*

1.4 Shrinking Snow and Ice: Rapid Change in the Polar Regions (topics: ice sheet dynamics, snow accumulation distribution, ice streams and ice shelves, sea ice, hydrological cycles in cold climate regions, status and uncertainty in ice sheet models, ice sheet mass balance including fluxes, altimetric and gravity satellite estimates**,** glacier mass balance and fluctuations**;** dynamic response of ice masses, distant forcings of ice sheets and sea ice; ice sheet motion and onset of ice streams) **(SOC Rep: Bindschadler, Kotlyakov and Lantuit)**

Possible Chairs: R Bindschadler (US) and V Kotlyakov (RUS); K Van der Veen, T Khromova

Possible invited speakers: D Wingham, I Vellicogna, E Rignot, W Abdalati, A Shephard, K Jezek, I Joughin, J Zwally, K Van der Veen, H Eicken, A Glazovsky, A Georgiadi, V Vuglinsky, D Atkinson; H Oerleman; D Wingham: P Mayewski; A Gordon, B Goodison,A Glazovsky, T Worby, J Comiso, S Laxon,, D Perovich, H Melling, N Young, M Braun, A Abe-Qouchi, O. Johannessen, T Worby, M van de BRoeke, R vande Wal, H Meyer, D Vaughan

1.5 Past, Present and Future Polar Climate Change (topics: polar change and variability over the last 200 years; modes of polar variability**;** paleo-records from the poles**;** implications of the last interglacial for future climate, the snowball earth, Permo-Carboniferous glaciations; Greenland changes; Antarctic changes**;** Antarctic Peninsula warming**;** Tidewater Glacier analogues; abrupt changes to climate; predicting future polar climate) **(SOC Rep: Dunbar and Storey)**

Possible Chairs: I Allison (AUS), N Smirnov (RUS); P Mayewski(US), V Lipenkov (RUS) , N Couture (EC), Dominique Raynaud (Fr), J Turner (UK)

Possible invited speakers: D Bromwich, J Shanklin J Turner, D Burridge, I Karol, V Radionov, E Wolff, J Francis, J Isbell V Masson-Delmotte (FRA) and M Siegert (UK) H Lantuit(EC), I Joughlin, A Shepard, H Pritchard, I Howitt, S Robinson,

D Vaughn, V Kattsov, V Lagun, G Leitchenkov, H Fischer, D Thomson, K Gohl R. Gersonde, V Lagun, X Cunde, T Ommen, R Alley, J Walsh, O Joahnnessen

1.6 Meteorology Processes in the Polar Regions (topics: high latitude atmospheric circulation; precipitation, boundary layer processes; synoptic and mesoscale systems; aerosols, trace gases, pollution and radiation climate; initiation, evolution, and predictability of high impact weather events; ocean-atmosphere-ice-land interaction**s**; the stratosphere and mesosphere initiation, evolution, and predictability of high impact weather events) **(SOC Rep: Dunbar and Fahrbach)**

Possible Chairs: Klaus Dethloff (Ger), Ian Renfrew(UK), John Turner (UK), J Drummond (CAN), T Utall (US), J Paatero (DAN), G Hansen (NOR), A Makshtas (RUS)

Possible invited speakers: D Bromwich (US), John King (UK), C Luepkes (Ger), M Serreze (US), D Thompson (US), M Tjernstrom, K Dethloff, J Walsh, R Bintanje

1.7 Polar Marine Ecosystems: Status and Change (topics: Census of Antarctic Marine Life **-** CAML**;** Arctic Ocean Biodiversity, The Status of Marine Ecosystems **-** ArcOD - CoML, adaptation and vulnerability, environmental and ecological gradients in marine ecosystems, physiological adaptations and limits, changing coastal ecosystems and processes, biological invasions, migration, invasions, marine ecosystems in Antarctica and Sub-Antarctic islands, observations and modeling of the impact of changing ice and ocean conditions on biota) **(SOC Rep: Convey, Gutt, and Baeseman)**

Possible Chairs: I Melnikov (RUS), D Begrstrom (AUS), G Vieira (EC), B Chen (China), SH Kang (Korea) (EC- J Xavier)

Possible invited speakers: A Crame, J Francis, C Smith, HO Pörtner, A Beylich, N Couture, P Convey, S Gordon, A Tishkov, E Fanta, A Brandt, E Murphy, E Hoffman, S Nicol (Aus), U Bathmann, I Werners, V Siegel, , M Klages, E Murphy, M Stoddart, R Gradinger, W Waegele, K Drinkwater, G Hosie, K Drinkwater

1.8 Polar Terrestrial and Freshwater Ecosystems: Status and Change (topics: environmental and ecological gradient, the Status of Terrestrial Ecosystems (ITEX), terrestrial ecology, stream and lake dynamic, changes in terrestrial environments**,** structure and function of terrestrial ecosystems, terrestrial ecosystems in Antarctica and Sub-Antarctic islands**;** climate, permafrost, and terrestrial ecosystem response, terrestrial carbon storage and export, landscape evolution) **(SOC Rep: Convey, Gutt, and Baeseman)**

Possible Chairs:, A Huiskes (NETH), A Neyelov (RUS), and J Baeseman (EC), US); N Cannone, A Tishkov , and M Raymond (EC), B Chen (China), SH Kang (Korea)

Possible invited speakers: K Danell, T Prowse, B Sirenko, I Smirno,W Vincent, G Henry, P Convey, D Bergstrom. S Chown, M Stoddart, A Tishkov, I Melnikov, M Gavrilo, V Romanovsky, C Vorosmarty, T Christensen, O Anisimo, H Wolfgang Hubberten, J Syvitsky, T Christensen, St Dallimore, J Boelhouwers, S Goriachkin, V Melnikov, A Georgiad, A Snorrason, T Ohata, T Prowse, K Saito, T Callaghan, C Tweedie, J Rozema, T Callagahn, A Betlich, S Lamoureaux, W Pollard

1.9 Status and Change in Cultural Heritage sites in Polar regions (topics: developments in international tourism and other impact factors, endangered sites as scientific stations, prehistoric sites, historic and hunting stations, mining and industrial sites, protection and conservation, international conservation organizations (ICOMOS, IPHC), role of cultural heritage sites in ATCM and AC. **(SOC: Hacquebord).**

Possible Chairs: Susan Barr

Possible invited speakers: *J F Le Mouel, C Ludecke, M Pearson, H P Blankholm, D Olynyk, J Hunston, R Roura, P Chaplin, R Stehberg, M Morrison, A Jensen, R Mackay, J Hughes, R Farrell, U Gustavsson.*

1.10 Status and Change in the Polar Regions – General Session - General sessions capture high quality presentations that do not fit into other sub-themes called out in the Science Program and to highlight those key issues judged by the community to need urgent attention in the polar regions**(SOC Reps: Kennicutt and Hacquebord)**

Possible Chairs: I Vellicogna; I Joughin; D Carlson, C Ellis-Evans; M Belland

2.0 POLAR/GLOBAL LINKAGES: TO UNDERSTAND THE LINKS AND INTERACTIONS BETWEEN POLAR REGIONS AND THE REST OF THE GLOBE

2.1 Coupled Cryosphere/Ocean/Atmosphere Systems (topics: teleconnections between the polar and mid-latitude regions, thermohaline circulation, distant forcings of ice sheets, teleconnections recorded in ice cores; forcings of surface accumulations, polar ocean acidification; changing ice conditions and impact on biota carbon cycle; physical oceanography; 0cean-atmosphere-ice-land-interactions, acidity) **(SOC Reps: Fahrbach, Loeng, and Lantuit)**

Possible Chairs: D Bromwich (US) and M Frezottie (ITA); G Hosie (AUS) and E Hoffman (US); H de Baar (Nl), L Anderson (Sw)

Possible invited speakers: J Turner; E McCarthy, E Fanta, M Hood, A Klepikov , D McGuire, R Dickson, H de BaarNiki Gruber, B. Tilbrook; U Riebesell, J Runcie, R Bellerby, C Heinze, P Treguer, H Fischer, G Lohmann, K Detholff, H Drange, T Trull, B Tilbrook, P Schlosser

2.2 Polar/Global Biological Connections (topics: polar processes in the global carbon cycles, bird migration, introduction of non-indigenous species, bipolar similarities and contrasts, concordant evolution, similarities and differences in ecosystems, bipolar communication - isolation) **(SOC Rep: Convey and Gutt, and Baeseman)**

Possible Chairs: K Conlan (CAN), T Worby, A McMinn

Possible invited speakers: S Chown, E Isla, I Werner, D Piepenburg, V Siegel,M Loonen, B Ebbinge, F Melhum, G Gabrielsen, J a van Franeker

2.3 The Sun's Interactions with the Earth's Atmosphere and Electromagnetic Environment (topics: weather balloon science; solar-terrestrial linkages and interhemispheric conjugacy, influence of solar activity on atmospheric processes) **(SOC Rep: Candidi)**

Possible Chairs:, Igor Mokho(RUS), Kirsti Kauristei (FIN), and Ryan Foy t(EC)

Possible invited speakers: A Weatherwax, J Turner, G Zerebtsov, O Troshichev, A Krivolutsky, Nicolay Smirnov, V Papitashvilli, E Fossat, A Pelligrini

2.4 Human Linkages: The History of Non-indigenous Peoples in Polar Regions - Impacts and Interactions (topics: oil and gas development, exploitation of polar resources – fishing; history of polar exploration and research; benefits and risks of Arctic Ocean seaway, advent of cash economies in the north, changing subsistence hunting practices) **(SOC Rep: Hacquebord)**

Possible Chairs: N Gilbert (NZ), D Avango (S, EC),E Andreeva

Possible invited speakers: D Landau, D Roots, L Brigham, D Avango, B Basberg, L Hacquebord, M Oglethorp, C Hartnell, U Gustavsson, H de Haas, M Bravo, S Sorlin,, P Martin, J Larus, D Thomas

2.5 Polar/Global Linkages: General Session - General sessions capture high quality presentations that do not fit into other sub-themes called out in the Science Program and to highlight those key issues judged by the community to need urgent attention in the polar regions **(SOC Reps: Kennicutt and Hacquebord)**

Possible Chairs: I Mokhov and V Kotlykov

3.0 A SENSE OF DISCOVERY – TO INVESTIGATE THE FRONTIERS OF SCIENCE IN THE POLAR REGIONS

3.1 Deep Sub-ice Water, Hydrological Systems and Ice sheet Interactions (topics: *s*ubglacial processes and water systems beneath the ice; impact on ice flow; tectonic setting; Gamburtsev Mts; subglacial ecosystems; sub-ice-shelf systems **(SOC Rep: Kennicutt and Storey)**

Possible Chairs: V Lipenkov (RUS) and JR Petit (FRA)

Possible invited speakers: H Fricker, M Studinger, R Bell, M Seigert, F Pattyn, R Bell, M Slidmore, D Morozova (EC), S Leibne, S Bulat, V Lukin

3.2 Frontiers in Polar Biology (topics: mapping the function and pattern of polar ecosystems; land-ocean interactions in changing polar environments,; evolution of Polar ecosystems) **(SOC Rep: Convey, Gutt, and Baeseman)**

Possible Chairs: D Gilichinski (RUS), T Naganuma (JAP) and D Avango (EC), B Chen (China), SH Kang (Korea)

Possible invited speakers: A Brandt, P Wassman, T Naganuma, V Wadley, A Wilmott, C Ellis-Evans

3.3 Polar Microbes, Genetics, and Molecular Biology (topics: subglacial ecosystems, microbiology of lakes and streams, the role of genetics and genomics in the light of polar glaciation history **(SOC Reps: Convey, Gutt and Baesmann)**

Possible Chairs: Dave Gilichinski (RUS), T Naganuma (JAP) and D Avango (EC)

Possible invited speakers: A Brandt, P Wassman, T Naganuma, V Wadley, A Wilmott, C Held, C Ellis-Evans, D Wagner A Murray, D Cowan, D Pearce, G Kowalchuk

3.4 Technological Advances and Polar Exploration (topics: technological legacies of the IPY; infrastructure and logistics support for polar research and societies; new technologies for polar research) **(SOC Rep: Kennicutt and Park)**

Possible Chairs: J Thiede (GER), J Fitzpatrick (US), G Jugie (FR), N Cunnungham

Possible invited speakers: JC Gascard, Of Boebel, J. Thiede, M Klages

3.5 Polar Weather and Climate Forecasting (SOC Rep: Dunbar and Loeng)

Possible Chairs: D Burridge (UK), M Beland (Canada), Ø. Hov(Norway)

Possible invited speakers: J Shanklin, P Clemente-Colon, A Yuan, M Serresze, K Dethloff, J Walsh, M Tjernstrom, T Bracegirdle, J turner

3.6 Frontiers in Polar Scientific Drilling (ANDRILL, SHALDRIL, ACES/IODP. Lake Elgyygytgyn) **(SOC Rep: Storey and Futterer)**

Possible Chairs: J Brigham Grette US) and P Barrett (NZ)

Possible invited speakers: T Naish, J Anderso,n M Jacobsson, M Melles, F Rack, R Mulvaney

3.7 A Sense of Discovery – General Session - General sessions capture high quality presentations that do not fit into other sub-themes called out in the Science Program and to highlight those key issues judged by the community to need urgent attention in the polar regions **(SOC Reps: Kennicutt and Hacquebord)**

Possible Chairs: T Callaghan and C Tweedie (EC)

4.0 THE POLES AS AVANTAGE POINT FOR OBSERVATIONS – TO USE THE UNIQUE VANTAGE POINT OF THE POLAR REGIONS TO DEVELOP AND ENHANCE EARTH OBSERVATIONS

4.1 Polar Observing Systems (topics: the Cryosphere Observing System (CryOS), the Arctic Ocean Observing System (iAOOS), the Southern Ocean Observing System(SOOS), other oceanographic observations; terrestrial observing networks, cabled observatories**,** long-term observatories - an IPY 2007-2008 legacy, improvement of polar meteorological and hydrological networks; automated observatory technologies, the North Pole Observatory; developing an IPY legacy of integrated polar observing systems, ecological monitoring, long-term biological observations and research) **(SOC Rep: Loeng, Fharbach, Rachold and Lantuit)**

Possible Chairs: B Goodison, JC Gascard (FRAN), J Drummond (CAN), T Utall (US), J Paatero (DAN), G Hansen (NOR), A Makshtas (RUS)

Possible invited speakers: E Fahrbach, B Coakley, JKey, C Tweedie, J Calder, C Lee, M Fedak, S Sandven, O Rogne, T Callaghan

4.2 Astronomy (topics: site testing; visible and infra-red astronomy, cosmic rays and extraterrestrial neutrinos; attributes of astronomical sites in the Antarctic plateau and the Arctic) **(SOC Rep: Candidi and Summerhayes)**

Possible Chairs: M Candidi and G Zerebtsov

Possible invited speakers: A Weatherwax, V Papitashvilli, M Burton, M Busso, E Fossat, J Carlstrom, C Speiring, T Giasser

4.3 New Ways of Looking at the Polar World (topics: combined satellite observations; seeing beneath the ice; improvement of polar meteorological and hydrological networks) **(SOC Rep: Summerhayes and Park)**

Possible Chairs: Johnathan Bamber and Tillmann Mohr

Possible invited speakers: A Behar, S Lamoureaux, S Gordeev, K Jezek, S Goginenei, C Vosomarty

4.4 Variations in the Earth's Magnetic Field and Inner Core Processes (SOC Rep: Candidi and Meloni)

Possible Chairs: A Liakhov and V Papitashvii (US)

Possible invited speakers:

4.5 Accessing and Preserving Data as an IPY Legacy (topics: data management, systems for and after the IPY, virtual globes,) **(SOC Rep: Kennicutt and Park)**

Possible Chairs: *T de Bruin and T Khromova*

Possible invited speakers:, *D Kharin, V Smolyanitsky, D Baker, M Parsons, K Finney*

4.6 The Poles as a Vantage Point for Observations - General Session - General sessions capture high quality presentations that do not fit into other sub-themes called out in the Science Program. and to highlight those key issues judged by the community to need urgent attention in the polar regions **(SOC Reps: Kennicutt and Hacquebord)**

Possible Chairs: *M Parsons, S Gearhead, T Mohr, E Sarukhanian*

5.0 PEOPLE AND RESOURCES AT THE POLES– TO INVESTIGATE THE CULTURAL, HISTORICAL, AND SOCIAL PROCESSES THAT SHAPE THE SUSTAINABILITY OF POLAR HUMAN SOCIETIES; TO IDENTIFY UNIQUE CONTRIBUTIONS TO GLOBAL CULTURAL DIVERSITY AND CITIZENSHIP; AND TO EXPLORE HUMAN INTERACTIONS WITH BOTH POLES.

5.1 People and Change (topics: recent environmental and social change in the Arctic; socio-economic consequences of environmental changes; Arctic people health, culture and economics and climate change; condition of infrastructure in polar regions; health and welfare of polar societies, resilience, vulnerability and adaptability of polar societies; living conditions of polar residents; indigenous peoples and change in the Arctic; human health and medical issues in polar regions; socio-economics of environmental change, human impacts on polar environments**;** changes in international law and politics, impacts of polar climate change on global politics, indigenous peoples and change in the Arctic; future challenges of Northern People, resilience, vulnerability and adaptability of polar societies) **(SOC Rep: Hacquebord)**

Possible Chairs: M Bravo, T Vlasova and S Ostertag (EC); I Krupnik, T Vlasova, _ Andreeva, K Parewick

Possible invited speakers: Y Csonka, L Kullerud , B Forbes, S Gearhead, N Einarsson (EC), C Callison, K Parewick (EC), D Avano, I Krupnik _ Andreeva, G Blaisdal, L Kielsen Holm, G Hovelsrud, B Poppel D.Bogoyavlenskiy, A.Siggner, G. Duhaime, C.M.Hild,V.Stordahl, A.Vaktskold, J. Ø. Odland, E.J. Molenaar, C. Bastmeijer, E.G.Broderstad, K van Dam

5.2 Harvesting and Exploitation of Polar Biological Resources (changes in populations and composition of fish and other natural resources due to ongoing fisheries, recovery of fish populations after ban of fisheries, shift of fish and krill stocks related to Climate Change, bioprospecting, reindeer herding, whaling, fresh water fisheries) **SOC Rep: Gutt)**

Possible Chairs: P Rodhouse (UK), S Mathiesen

Possible invited speakers: K-H Kock, L Hamilton, R Rasmussen, A Atkinson, M Stoddart), I Everson, E Murphy, C Waluda (EC), FJ Wrona, T Dick,

5.3 Conservation, Tourism, and Visitor Management (topics: tourism at the poles: benefits and risks, National Operator operations: benefits and risks; IPY Aliens project) **(SOC Rep: Kennicutt and Hacquebord)**

Possible Chairs: L Brigham, EC- D Haase, D Landau

Possible invited speakers: R Roura, A Hemmings, C Bastmeijer, M Lamers(EC), K Crosby, J.Green, M.Geitz, H.U.Peter,B.Stonehouse, K.de Korte, A.Grenier, S Poncet, K Hughes, P Mason, B Stonehouse

5.4 The Role of Native Knowledge in Modern Polar Science (SOC Rep: Hacquebord)

Possible Chairs: S Gearhead and V Gofmann

Possible invited speakers: T Fenge,D. Jolly, I. Krupnik, G.Kofinas, T. Thorpe, M.Freeman, G.Wenzel,P.Usher, N.Thotpe, J.Anawak.

5.5 Arctic and Antarctic Archeology (topics: lessons of the past, peopling of the Arctic, living on the edge, adaptation processes, small scale societies in the Arctic, cross cultural contacts in the Arctic and archeology and ecology (**SOC Rep: Hacquebord)**

Possible Chairs: M.A.P.Renouf, L.Hacquebord, EC- D Avengo

Possible invited speakers: B.C. Hood, H P Blankholm, B Grønnow, P. Sutherland, R. McGhee, M.A.P.Renouf, S. Kaplan, J.Woollett, M.Pearson, A.M.Jensen, T. McGovern, H.Bjerck,N. Broadbent,W.W.Fitzhugh, J.Estevez, M.Appelt. J.F.Jensen

5.6 Polar Bridges: Social Scientists and Natural Scientists Working Together (topics: social-physical synergies, integration of research and education) **(SOC Rep: Hacquebord)**

Possible Chairs: G Duhaimes, P Prestrud, B Corell

Possible invited speakers: M Murrey, H Huntington, V Rachold, L Hacquebord, A Hakon Hoel, H Vilhjalmsson.

5.7 Polar History and Institutionalization of Polar Research: The International Polar Years (geopolitics and the role of science, influence of cold war on the IGY, bilateral or international co-operation and institutionalization, the history of SCAR) **(SOC Reps: Hacquebord)**

Possible Chairs: C Luecke

Possible Invited Speakers: B.P.Abbink (EC),J.Berguno, A Elzinga, I.Gan, E Genest, A Honkins, M Jara, N Llanos, J Moore, SCAR History AG, U Wrakberg, S.Sorlin, M.Bravo, D Walton, M Bravo, Wrakberg, S Sorlin, P Clarkson

5.8 People and Resources at the Poles– General Session -General session capture high quality presentations that do not fit into other sub-themes called out in the Science Program and to highlight those key issues judged by the community to need urgent attention in the polar regions.**(SOC Reps: Kennicutt and Hacquebord)**

Possible Chairs: O Young and Xavoir (EC)

APPENDIX 1 – SCAR/IASC International Science Organizing Committee

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