Report of BipAG Meeting, Pribaltiskaya Hotel, St Petersburg, July 8, 2008

Participants:

Heinz Miller (Ger) Chairman
Nick Owens (UK)
Wayne Pollard (Can)
Bryan Storey (NZ)
Fridtjof Mehlum (Nor)
Volker Rachold (IASC)
Colin Summerhayes (SCAR)

Unable to attend:
Huigen Yang (Chin)
Elena Andreeva (Rus)
Sue Moore (USA)

1. Purpose of the meeting:

In the light of the comprehensive briefing note provided in WP 21(i) the Group was asked to consider what further advice to provide under its two terms of reference (ToR)

(i) to advise the SCAR and IASC Executive Committees on the development of instruments such as workshops, programs and networks to address bipolar issues (i.e. the first priority is to see how and where we could work, more closely together). And

(ii) to advise the SCAR and IASC Executive Committees on the development of mechanisms to nurture the IPY 2007/2008 legacy, with a special focus on the roles of IASC and SCAR.

Recommendations are highlighted in yellow below and summarised in section 4.

2. How SCAR and IASC might work together more closely.

The Group noted that SCAR and IASC had just signed two memoranda of understanding (MoU) connecting them both to the World Climate Research Programme (WCRP) on the one hand and to the International Association of Cryospheric Sciences (IACS, a part of IUGG) on the other hand. This means that all 4 of ICSU’s bodies dealing with the cryosphere and polar regions are now closely connected, which should lead to greater efficiency and effectiveness in the coordination of research in these areas.

The Group also noted that SCAR and IASC had both just signed a MoU making them co-sponsors of the Association of Polar Early Career Scientists (APECS), and that they had also co-funded the APECS workshop that took place as part of SCAR’s Science Business Week on July 7.

Reflecting on the success of the present conference (the largest ever polar conference, the first ever bipolar conference, and the first SCAR/IASC conference), the Group considered that the exercise was worth recreating from time to time, though not at frequent intervals. Bearing in mind that there would be bipolar IPY conferences in Oslo in June 2010, and in Canada in 2012, and that these would be organised under
the banner of ICSU and WMO and be co-sponsored by IASC and SCAR, the Group recommended considering holding another SCAR/IASC OSC in 2014 or not long thereafter depending on the location of the SCAR meeting (which would have to be in the northern hemisphere).

In the run up to the BipAG meeting written submissions had been received from Group members Sue Moore and Wayne Pollard. The Group agreed these recommendations should be taken forward as follows:

**SCAR and IASC should:-**

(i) **include cetaceans in polar ecosystems research** (this is missing from both SCAR and IASC’s portfolio); it would be necessary to form a link to the IWC. SCAR and IASC should consider (a) sending a representative to the IWC-CCAMLR workshop in August 2008; (b) participating in global networks and workshops involving higher trophic working groups, so as to phase in consistent integration of seabirds and marine mammals in ecosystem science at both poles.

(ii) **Include passive acoustics in polar ocean observatories** (something already recommended by the SCAR acoustics group) – for year-round detection of marine mammals.

(iii) **encourage integration of the commonly separated Arctic and Antarctic funding, management and logistics streams at the national level**;

(iv) **develop a series of international workshops to foster international partnerships and exchanges**;

(v) **recommend that funding agencies from polar science countries work together to support international bipolar science** (as they do the ODP programme);

(vi) **encourage national programmes to develop bilateral or multilateral agreements to facilitate scientific exchanges and the sharing of resources and infrastructure needed to get polar science done**.

### 3. Mechanisms to Nurture the IPY legacy

Colin Summerhayes briefed the Group on the outcomes of the IPY Joint Committee meeting that took place in St Petersburg on July 4-5, 2008.

IPY has promoted the development of the following elements that could be considered to encompass the IPY legacy:

(i) **development of observing networks**;

(ii) **mechanisms to encourage the engagement of young (early career) researchers in polar science**;

(iii) **mechanisms for ensuring that data and information from IPY projects are captured and made readily available for posterity (to complement ongoing efforts to capture data)**;

(iv) **mechanisms for developing outreach and education programmes to widen lay interest in the poles and polar science**;

(v) **a mechanism for bringing polar social and natural scientists together**.

### 3.1 Observing Systems
In recent years, the USA created the notion of an Arctic Observing Network (AON), which then became adopted by the Arctic Council, working together with IASC, and transformed into Sustained Arctic Observing Networks (SAON). The AON concept was also adopted by SCAR as the Pan-Antarctic Observing System Network (PAntOS). SAON and PAntOS aim to identify and bring together under one umbrella all of the different kinds of observing networks in their respective regions, so as to exploit possible synergies between them, identify gaps that need filling, and manage the networks more efficiently and effectively.

The SAON community has recently held a set of meetings (Edmonton, Stockholm), which by the end of 2008, will lead to a set of recommendations on how to achieve long-term Arctic-wide observing activities that provide free, open and timely access to high quality data that will realise pan-Arctic and global value-added services and provide societal benefits.

The Arctic Ocean Science Board (AOSB), which has been much involved in the development for IPY of iAOOS (integrated Arctic Ocean Observing System), will become the Scientific Standing Committee for the Marine System in new IASC structure.

The PAntOS community met for the first time in St Petersburg during the present SCAR Science Business Week. It plans to develop an inventory of activities, and then to develop linkages between the systems identified. The process is at an early stage.

SCAR has also worked with WCRP to produce CryOS, a Cryosphere Observing Strategy that can be downloaded from the SCAR web site (physical sciences). SCAR is now working on development of a Southern Ocean Observing System (SOOS).

Developments like iAAOS, SOOS, SAON and PAntOS show that IASC and SCAR are already working to develop and implement the IPY legacy of observing systems. These systems are built from national elements funded through national programmes. SCAR and IASC through their steering committees should continue to actively support the continued development of the respective science objectives and the international scope of these observing systems.

The legacy of the IPY should therefore include more observing systems than when we started, and improved coordination within them and between them. There seems to be no reason why SCAR and IASC should not succeed in maintaining this aspect of the legacy.

In a written submission Sue Moore suggested:

(i) collating IPY related biological observations as a foundation for polar observing networks;

(ii) creating underwater noise baselines for acoustic observations, based upon data obtained from long-term recorders deployed during IPY;

(iii) collating data from IPY projects relating to mitigation and management of the human footprint at the poles (following the processes and recommendations of ICARP-II Working Groups 1 and 2).

These suggestions will be passed to the relevant groups developing observing systems. The Group noted that biological observations are already being incorporated into international databases in Antarctica. Perhaps something similar is needed in the Arctic.
SCAR and IASC are not the only ones developing polar observing systems. The WMO also has its networks of meteorological stations and has begun something called Cryosphere Watch. WMO and IOC (through their shared joint technical commission - JCOMM) have networks of ocean observing devices. All of these are linked to global observing systems through the Group on Earth Observations (GEO) in Geneva, and its Global Earth Observing System of Systems (GEOSS), to which SAON, PAntOS, SOOS and CryOS will contribute. The Group recommended that:

Links should be established between SAON and PAntOS to ensure that they develop in a compatible way and learn from the best practice of each other.

Observing systems are essential to providing information about climate change. In that context it is recommended that

SCAR and IASC should consider applying for observer status with the IPCC.

3.2 Data and Information Management

The focus of the IPY data programme lies on getting data from all IPY programmes into national and international databases (World Data Centres). It is too early to judge how successful this attempt will be, since data is only now beginning to emerge from a few IPY programmes. The flood of data from IPY programmes will not emerge until after the IPY period ends (1 March 2009). That being the case:

SCAR and IASC should prepare themselves as the existing polar coordination structures to take a prominent role in ensuring that IPY project data goes into national and international databases, to ensure the IPY Data Legacy.

SCAR has a committee on Antarctic Data Management (JCADM), which coordinates the activities of the National Antarctic Data Centres and provides metadata on Antarctic data to the international Antarctic Master Directory (AMD), which is part of the Global Change Master Directory (GCMD).

JCADM should be charged with taking on the responsibility for liaising with bipolar or Antarctic IPY programmes and national IPY committees to ensure that IPY data goes into appropriate databases (e.g. NADCs) and that metadata end up in the AMD.

A body like JCADM is a mechanism that should form part of an overarching data and information management strategy. SCAR is now developing such a strategy for the Antarctic and it should be ready within a year or so (a draft is now being considered by the SCAR Delegates). Ideally IASC should be working along the same lines, so the logical recommendation is that:

SCAR should keep IASC informed about the development of the SCAR data and information management strategy, with a view to the two adopting the same strategy so as to facilitate interoperability between the two hemispheres.

The strategy should be seen as a spin-off from the IPY, that provides wider access to data for all in the future – something that is a requirement of the Antarctic Treaty.

IASC does not have a comparable committee, but in the interests of improving the coordination of data and information management in the Arctic it is thinking of developing this role. The Group recommends that:

IASC develop a data and information management committee to work with national Arctic data repositories and to follow a data and information management strategy
(preferably building on the one being developed by SCAR, so as to facilitate interoperability).

To achieve a greater investment by science programmes in data and information management, the Group recommends that:

All SCAR and IASC programmes should have a clearly specified data and information management plan that follows the IPY data policy of making all data eventually available to all.

Another way to encourage greater investment in data and information management is to develop peer-reviewed open access data journals with their own DOIs, which provides a means through which data providers can gain recognition for their work. The Group recommends that:

SCAR and IASC should support the ongoing development of open access data journals.

3.3 Development of the Next Generation of Polar Scientists

One of the significant achievements of the IPY has been the creation of the Association of Polar Early Career Scientists (APECS), which is now co-sponsored by IASC ad SCAR. IASC and SCAR agree to foster the development of early career scientists through mentoring and other schemes, and to facilitate the development of networking between scientists of all ages and experiences, with the aim of helping early career scientists to improve their contribution to advancing polar science. The existence and health of APECS will help to ensure that this part of the IPY legacy remains vibrant and useful into the future.

3.4 Education and Outreach (EOC)

The IPY EOC programme was designed to interest the public in the polar sciences and their significance. Various networks have been developed, and web-based programmes have been established to take polar science into the classroom across the world, notably through multilingual teaching tools. This programme has provided a valuable addition to similar efforts carried out by some polar research agencies in their own countries. The question now is to what extent can or should SCAR and IASC help to maintain this programme, given their own slender resources and present set of budgetary priorities?

In order to achieve greater investment by science programmes in education and outreach, the Group recommends that:

All IASC and SCAR programmes should have a clearly specified education and outreach plan.

SCAR and IASC can also encourage coordination of such activities, and the exchange of education and outreach materials, between different national programmes. This requires an appeal to national agencies to enhance their own activities in this area, and to coordinate across national borders.

The efforts of Monaco’s Prince Albert to develop education and outreach for the polar regions could be explored as an additional avenue through which SCAR and IASC might work.

If SCAR and IASC are to support an education and outreach programme it needs to be clearly defined and budgeted, with appropriate time lines and clear deliverables.
4. Summary of Recommendations

1. SCAR and IASC should:-
   - include cetaceans in polar ecosystems research.
   - Include passive acoustics in polar ocean observatories.
   - encourage integration of the commonly separated Arctic and Antarctic funding, management and logistics streams at the national level
   - develop a series of international workshops to foster international partnerships and exchanges
   - recommend that funding agencies from polar science countries work together to support international bipolar science.
   - encourage national programmes to develop bilateral or multilateral agreements to facilitate the sharing of resources and infrastructure needed to get polar science done.

2. Links should be established between SAON and PAntOS to ensure that they develop in a compatible way and learn from the best practice of each other.

3. SCAR and IASC should consider applying for observer status with the IPCC.

4. SCAR and IASC should prepare themselves as the existing polar coordination structures to take a prominent role in ensuring that IPY project data goes into national and international databases, to ensure the IPY Data Legacy.

5. JCADM should be charged with taking on the responsibility for liaising with bipolar or Antarctic IPY programmes and national IPY committees to ensure that IPY data goes into appropriate databases (e.g. NADCs) and that metadata end up in the AMD.

6. SCAR should keep IASC informed about the development of the SCAR data and information management strategy, with a view to the two adopting the same strategy so as to facilitate interoperability between the two hemispheres.

7. IASC develop a data and information management committee to work with national Arctic data repositories and to follow a data and information management strategy (preferably building on the one being developed by SCAR, so as to facilitate interoperability).

8. All SCAR and IASC programmes should have a clearly specified data and information management plan that follows the IPY data policy of making all data eventually available to all.

9. SCAR and IASC should support the development of open access data journals.

10. All IASC and SCAR programmes should have a clearly specified education and outreach plan.