

**Report on Arctic Science Summit Week (ASSW)
14-18 March 2007, Hanover, New Hampshire, USA**

1. US Polar Research Board (PRB) (Wed., March 14)

I gave an update on SCAR to the USPRB (which doubles as the US SCAR Committee). SCAR V-P Chuck Kennicutt also attended. The update (powerpoint) will be available on the presentations page of the SCAR web site. People seemed pleased with our focus on a few selected important science programmes, and with our attention to highlighting our achievements.

I also gave them a preview of the joint SCAR/IASC presentation on “Antarctic and Arctic Research Partnership Opportunities”, the powerpoints for which are (or soon will be) on the presentations page of the SCAR web site. They liked the way in which SCAR is working increasingly closely with IASC.

2. Science Day (Thurs., March 15)

A Panel discussion on new institutional science partnerships was followed by a suite of excellent science presentations concluding with a top-notch presentation by James White (U Colo., Boulder) on “The Arctic in the Global Climate System: lessons and Human Response from Past Abrupt Changes”. Jim made clear the fact that today’s models are not good at reproducing the regional warming features of today’s Arctic (warming there is over the land, but the models have it over the ocean!). We have the same problem.

I attended a lunch meeting with the Co-Chairs of the 2008 St Petersburg Scientific Organising Committee, and IASC Director Volker Rachold, to agree on the basic framework for the meeting. Given this agreement (some 50 sessions in 4 days) they can now engage all members of the SOC in developing the science themes and topic titles under the 6 IPY overarching themes that will govern the conference structure. It was agreed that two young scientists would be invited to join the SOC, to represent youth in the planning process. It was also agreed there should be awards for best poster by a young scientist and best talk by a young scientist. Some way needs to be found to identify young researchers in their abstract submissions.

3. Heads of Arctic and Antarctic IPY Secretariats (HAIS)(Thurs., March 15)

David Hik (Canada) chaired a short meeting to enable the HAIS to get feedback from Dave Carlson on the recent IPY Joint Committee meeting, and to discuss how to provide feedback to the JC on developing the IPY legacy. The challenges are to identify what the legacy elements are, and to identify how they are to be sustained (i.e. funded).

I suggested that we were failing to get our message across to key groups like the UN Framework Convention on Climate Change. Maybe Ed Sarukhanian can advise how we do this, since WMO has an entrée there. I have asked him for his views (e-mail).

Someone suggested that we should approach the UN to get March 1 declared Polar Day every year from the end of IPY, to keep interest up post IPY.

The group has no southern hemisphere representation, so I introduced Hik afterwards to a representative from Korea, and to Prof Zhang from China.

As an aside, a member of the Chinese delegation expressed interest in the SCAR Secondments programme.

4. Projects Day (Fri., March 16)

Volker Rachold and I jointly gave the SCAR/IASC presentation on “Antarctic and Arctic Research Partnership Opportunities”. The talk was very well received. We got lots of positive feedback during question time and afterwards in the halls. The powerpoint slides and an explanatory text should soon be posted on the SCAR web site.

Paul Egerton gave an interesting talk on funding for Arctic research. I have asked him to give me the overheads and text for SCAR Execs.

A series of good talks were given:

- (i) Odd Rogne explained the need for sustained observations and a Sustained Arctic Observing Network – SAON.
- (ii) Dorthe Dahl Jensen described IPICS (International Partnership for Ice Core Science) which is co-sponsored by PAGES and SCAR. IPICS plans to drill in Dome A to get more than 1 million years of climate history, and in the deepest ice in Greenland to get back beyond the last interglacial period (140,000 years ago). Dorthe is working on a paper to explain why global temperatures during the last interglacial were 3-5 °C warmer than today, and what the effects were (e.g. on sealevel).
- (iii) Bob Correll described the progress of the ICARP-II process (International Conference on Arctic Research Planning, 2005), the overall theme for which is “The Arctic System in a Changing World”. The suite of 12 ICARP-II reports are now being printed and will soon be available on CD/DVD. In the meantime they can be downloaded from the IASC website: <http://www.iasc.se/icarp.htm>.

5. IASC Council (Sat., March 17)

The IASC Council meeting focused on internal responses to the Report of the Review of IASC. A structure rather similar to that of SCAR is suggested, which should make it easier for SCAR and IASC to work closely together on bipolar projects. Consideration is being given to merging IASC and the Arctic Ocean Science Board (AOSB). I made a report to the Council on the growing links between SCAR and IASC (see Annex 1).

6. Association of Polar Early Career Scientists (APECS) Meeting (Sat., March 17)

I attended this meeting and gave a short presentation on the SCAR Fellowship programme. APECS has its own web site (www.kent.edu/Polar). It is a new initiative to bring together early career polar scientists from around the world. It is an endorsed IPY project that provides a web forum for discussion and news (e.g. about job opportunities).

7. Arctic Ocean Sciences Board (AOSB) (Sun., March 18)

I gave a report to the AOSB on the nature and different elements of SCAR's activities in oceanography, and on our various international partners and linkages in oceanography and marine biology.

While I was present this 26th AOSB meeting covered the following items:

- (i) Report on progress in planning for the Integrated Arctic Ocean Observing System (iAOOS), by Jean-Claude Gascard. The project was approved in 2005, and they have come a long way in developing their plans, which focus on a joint approach by scientists mainly from the USA and the European Union, but also including other countries. The line-up of countries and the extent of their involvement is still to be determined. We can learn a lot from them in planning the Southern ocean equivalent (SOOS).
- (ii) Report on ship coordination through the ASCI programme (Arctic Ship Coordination during IPY). This sounds more or less like what COMNAP does through its ships committee, but is more elaborate and apparently more up to date.
- (iii) The follow up to the ocean elements of ICARP-II. There was a report on a meeting held in Potsdam in November 2006 to encourage integration across the marine components of ICARP-II, which are: the deep basin; margins and gateways; and continental shelves. Those involved in the cross-linking activity will (a) inventory activities; (b) focus on cross-cutting technological developments and infrastructure; (c) focus on underpinning modelling; and (d) develop additional cross-cutting research priorities. The latter are likely to include: (e) spatially integrated contemporary studies to provide a holistic understanding of the environment; (f) improved monitoring; (g) obtaining high resolution paleoclimate records; (h) drilling to get the long term climate history; (i) studies of subsea permafrost and associated methane hydrates.

Several proposals have been developed for drilling by the Integrated Ocean Drilling Program (IODP) into unsampled central basin strata likely to contain a climate record going back into the Cretaceous. These proposals will be grouped as an IODP Mission to the Arctic Ocean. This work ties in closely with what we are doing in ACE.

I was not able to attend discussions on remaining topics.

It remains to be seen whether AOSB will be integrated into IASC in the new IASC structure. Clearly IASC does need a marine component in its programme; clearly AOSB currently fills that gap. The question is – how do these two come together? One possibility is that it may be part of a federal structure – for instance jointly sponsored by IASC, or formally affiliated to IASC. Watch this space. The issue was not discussed while I attended the meeting, though it was discussed with me off-line.

Annex 1

Progress in Relations between SCAR and IASC Report to IASC Council, March 17, 2007 Arctic Summit Science Week (ASSW) Hanover, New Hampshire

Background

In July 2006, following agreement by IASC Council and SCAR Delegates, the Presidents of SCAR and IASC signed a Letter of Agreement. The letter recognised that there are many common interests between SCAR and IASC in scientific research in the polar regions, and that there is much to be gained from developing a synergy between SCAR and IASC in polar and bipolar research. Development of this link at this time was designed to enable the two organisations to make a more effective contribution than they might otherwise make to the success of the International Polar Year. SCAR and IASC agreed to combine their efforts in selected fields and activities (to be decided by mutual agreement) so as to raise the level of impact of both organizations in terms of making scientific advances and of advising policy makers (for example of the likelihood and likely effects of climate change), as well as to avoid duplication. The agreement will last for 5 years in the first instance.

Progress

To facilitate the process, SCAR and IASC agree on the following goals (in bold) against which progress is reported in italics:

- (i) **to invite each other to attend the meetings of their major bodies (SCAR Delegates' Meeting and IASC Council).** *Steve Bigras (for IASC) attended the SCAR Delegates' meeting in Hobart (July 2006), and Colin Summerhayes (for SCAR) attended the IASC Council meeting at ASSW in March 2007.*
- (ii) **to encourage appropriate linkages between the relevant existing SCAR and IASC scientific projects.** *Volker Rachold made a teleconference presentation on IASC to the SCAR Cross-Linkages meeting in Rome (November 2006), which led to (i) agreement for SCAR and IASC to co-sponsor the 2nd High Latitude Climate meeting (Seattle, October 21-24, 2007); (ii) discussions about a possible joint paleoclimate project (SCAR Contact Jane Francis of the ACE programme). In addition there is a possibility of linking SCAR and IASC marine biology projects (Guido di Prisco).*
- (iii) **to encourage their scientific communities to develop joint bipolar projects and approaches in appropriate fields.** *(a) Chris Rapley suggested to IASC in a 15 November 2006 e-mail to Volker Rachold that SCAR, IASC and CliC should develop a "Manhattan Project" on dynamic ice sheet models to overcome inadequacies in existing models to address the question of how much ice might melt, and when, to raise sea level by significant amounts. (b) Colin Summerhayes suggested at the IAC Council meeting that ocean*

acidification was another grand challenge that the two organisations could address together in future. (c) Colin Summerhayes suggested that IASC might like to join SCAR in its co-sponsorship of the International Partnership for Ice Core Science (IPICS). (d) IASC has asked Colin Summerhayes to advise them on building links to the World Climate Research Programme (with which SCAR has a Memorandum of Understanding). (e) IASC may also follow the SCAR lead in developing a connection to SCOR for oceanic research. (f) in 2006 Colin Summerhayes invited Berry Lyons (Byrd Polar) to give a presentation in Hobart on the Arctic Observing Network (AON). This led to development by SSG-PS of a new Action Group, on a Pan-Antarctic Observing System (PAntOS). AON (now Sustained AON, or SAON) and PAntOS will together provide an observing system legacy for the IPY. (g) SCAR has been developing with CliC (WCRP) plans for a bipolar cryosphere observing system that IASC will benefit from.

- (iv) **to work together in arranging workshops, conferences, and reports on topics of mutual scientific interest.** *SCAR and IASC have agreed to jointly sponsor the SCAR Open Science Conference in St Petersburg, Russia (8-11 July 2008). The title of the meeting is Polar Research – Arctic and Antarctic Perspectives in the International Polar Year. A Scientific Organising Committee has been formed with representatives from both organisations. It has SCAR and IASC co-chairs. The SOC will begin working shortly on developing the meeting programme, which will be arranged under the 6 themes of the IPY (Status, Change, Global Linkages, New Frontiers, Vantage Point, and Human Dimension). We expect to have some 50 sessions divided into 300 papers and 300 posters.*
- (v) **to exchange ideas on best practices in data and information management.** *Both organisations have interacted with the IPY Data Subcommittee. The Chair of SCAR's JCADM is advising IASC on the development of approaches to data and information management.*
- (vi) **to exchange newsletters and advertise each other's newsletters and web sites on their own web sites.** *Arrangements have been made to highlight IASC and the link to SCAR on the SCAR partnership web page.*
- (vii) **to develop combined approaches to communicating with the wider community on the significance of polar research to the solution of societal issues, including their respective experience in giving advice to the AC and ATCM.**
 - (a) *Chris Rapley suggested in a 4 January 2007 e-mail to the IASC President that SCAR and IASC should work together in discussions with ICSU to improve the representation and involvement of the cryosphere in the Earth System Science Partnership (ESSP).*
 - (b) *Colin Summerhayes suggested that there is scope for SCAR and IASC to work together to provide a statement for public consumption on the state of the polar climate and its implications; such a document would be informed by IASC's Arctic Climate Impact Assessment, by IASC's plans being developed under the ICARP-II planning process, by SCAR's State of*

the Antarctic Climate document for ATCM, and lastly by the outcomes of the Seattle workshop on High Latitude Climate.

- (c) *IASC Council agreed that there is potential for SCAR and IASC not only to continue to work together in the Joint Committee for the IPY, but to consider (with ICSU) how they may jointly manage the IPY legacy post March 1, 2009.*
- (d) *On March 16, 2007, SCAR and IASC gave a well-received joint talk to ASSW on “Antarctic and Arctic Research Partnership Opportunities”. This was an historic “first” – the first collaborative joint presentation of how we are working together, especially towards the St Petersburg meeting.*