



# SCAR Involvement in the International Polar Year

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# SCAR Background

- Formed in February 1958, SCAR evolved from the Special Committee on Antarctic Research established by CSU to co-ordinate the continuing scientific research of the twelve nations active in Antarctica during the IGY
- Mix of national scientific representatives (27 full Members + 4 Associates) and CSU union representatives (7)



# SCAR Objectives

- to initiate, develop, and co-ordinate leading edge international scientific activity in the Antarctic region, and on the role of the Antarctic region in the Earth System
- to provide objective and independent scientific advice to the Antarctic Treaty Consultative Meetings and other organizations on issues of science and conservation affecting the management of Antarctica and the Southern Ocean
- to facilitate free and unrestricted access to Antarctic scientific data and information
- to develop scientific capacity in all SCAR Members, especially with respect to younger scientists
- to promote the incorporation of Antarctic science in education at all levels
- to communicate scientific information to the public



# SCAR For the Tw enty First Century

- SCAR is in a state of transtion
- New science programmes will be approved in October 2004
- Aim to produce more cross-disciplinary science
- New format conference will be the premier Antarctic science conference
- New Executive Director, April 2004
- New web site ([www.scar.org/](http://www.scar.org/))



# SCAR Science

- Umbrella provided by Standing Scientific Groups for Geosciences, Life Sciences, & Physical Sciences
- 5-6 Major Programmes lasting 4-10 years
- Action Groups to address short term initiatives (2 - 4 years)
- Expert Groups where a longer term view is required (4 - 10 years)
- Joint Committee for Antarctic Data Management (JCADM).



## 5 New Major Programmes

- **CACE** – Cenozoic Antarctic Climate Evolution
- **CESTAR** – Interhemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research
- **AGCS** – Antarctica and the Global Climate System
- **SAIE** – Sub-glacial Antarctic Lake Exploration
- **EBA** – Evolutionary Biology of Antarctica



# SCAR Co-sponsored programmes

- WCRP's Climate and the Cryosphere (CIC) Programme; Southern Ocean Panel (CLIVAR); International Programme for Antarctic Buoys (IAB);
- SCAR-SCOR Coordinating Group on Interdisciplinary Southern Ocean Science (ISOS)
- Bipolar Cryosphere Theme study with space agencies, UN agencies & WCRP



# Action Groups and Expert Groups

- **Geosciences:** Age Growth and Evolution of Antarctica (AGEANT); Permafrost; Geodesy; Geographic Information
- **Life Sciences:** Birds; Seals; Human Biology and Medicine; Best Practices for Conservation; Global International Waters Assessment (GIWA)
- **Physical Sciences:** Plateau Astronomy Site Testing; Middle Atmosphere Dynamics and Electron Precipitation; Antarctic Peninsula Tropospheric-Tropospheric Coupling; Oceanography; Reference Antarctic Data for Environmental Research; Modeling and Observational Studies of Katabatic Winds; Tropospheric Aerosols and their Role in Climate; Solar-Terrestrial Processes and Space Weather; Astronomy and Astrophysics; Operational Meteorology; Ice Sheet Mass Balance and Sea Level; International Trans-Antarctic Scientific Expedition; Sea-Ice Processes and Climate.



# Relation of SCAR Science to PY

- SCAR will design projects in such a way as to be complementary to, and to reinforce, PY activities;
- Where feasible, SCAR's projects could become major thrusts of the PY;
- They will start in 2005, and use PY as a Special Observing Period;
- They will make major contributions to the PY;
- They will enhance the present SCAR networks of people, data and information;
- They will enhance the amount of data and information;
- They will help to build scientific capacity;
- They will continue after PY to achieve project goals and establish long term monitoring observatories.



# How Can the PY help SCAR?

- The PY can advance leading edge science by enhancing SCAR programmes
- The PY can expand critical measurements (e.g. to validate satellite data; to ensure synoptic observations)
- The PY can create or enhance information networks and encourage exchange of key data
- The PY can help to improve understanding of key processes, including, for instance:
  - continental tectonics;
  - recent geological history;
  - climate and glacial history;
  - the relation between ice sheet mass balance and sea-level;
  - the evolution of under-ice lakes;
  - the relation of biobio to climate;
  - the role of tropospheric aerosols in climate.
- **The PY should build on SCAR's existing programme platforms**



# How Can SCAR help the PY?

- By helping to manage the PY process, & providing science advice;
- By promoting PY in government circles through the Treaty system
- By providing an extensive network of scientific experts;
- Via links directly to funding agencies in its Member countries;
- By helping to develop PY plans and to review proposals;
- By encouraging the development of novel proposals;
- By integrating the results of novel PY activities into existing programmes, adding value to both;
- By offering access to the network of Antarctic databases, which will be essential for storage and management of PY data;
- By offering synergy with ongoing efforts, avoidance of duplication, and filling of important gaps in knowledge and understanding;
- **SCAR will take a leading role in providing scientific advice for the PY process.**



# SCAR Advisory Committee on IPY

- § to advise the Executive Committee on the SCAR input to the IPY Science Plan;
- § to advise the Executive Committee on the SCAR role in IPY Implementation, and on the content of the IPY Implementation Plan;
- § to work with COMNAP to realize IPY objectives for the southern hemisphere;
- § to ensure that IPY is represented in the SCAR Scientific Research Programmes.



# Provisional SCAR Thoughts on PY

- One or more “Flagship” Projects (e.g massive programme of short ice coring to solve the problem of topographic control on ice accumulation, coupled to high resolution climate model);
- A bi-polar “Signature event” (e.g capitalise on a satellite launch or an IODP cruise);
- Comprehensive approach to data and information management;
- Involve less-developed countries in major expeditions;
- A synthesis “wrap-up” event;
- Series of symposia - e.g. on Space observations and the Polar Regions”;
- A book on Polar (or Antarctic) Science.