What SCAR does
Facilitates science
Provides collaborative opportunities
Supports science meetings and activities
Develops products (e.g. Bedmap2)
Facilitates infrastructure access across members
Provides evidence for policy
Identifies priority themes

What’s in it for you?
Research opportunities
Collaborative potential
Infrastructure access
Big project participation (e.g. PAIS & IODP)
Dynamic meetings
International support
Routes to research impact
Awards, Fellowships, Capacity Development
WHAT IS SCAR?

• The 1957-58 International Geophysical Year established that international scientific activity in Antarctica needed coordination – so SCAR was born!

• SCAR is an inter-disciplinary committee of the International Council for Science (ICSU).

• SCAR initiates, develops and coordinates high quality international scientific research in the Antarctic region.

• The scientific business is conducted by SCAR Science Groups which represent the scientific disciplines active in Antarctic research.

• SCAR provides objective, independent scientific advice to the Antarctic Treaty Consultative Meetings and other organizations such as the UNFCCC & IPCC.
To be an engaged, active, forward-looking organisation that promotes, facilitates and delivers scientific excellence and evidence-based policy advice on globally significant issues in and about Antarctica.
Member Countries

Full Members (32) are in dark blue, Associate Members (11) in lighter blue. ICSU Unions (9) are not shown.
SCAR initiates, facilitates and coordinates international cooperation in scientific research conducted in and from the Antarctic region and on the role of Antarctica in the Earth system.

Much of SCAR’s work is carried out through its subsidiary groups:

- Science Groups (SGs)
- Scientific Research Programmes (SRPs)
- Expert Groups
- Action Groups
- Advisory Groups
- Groups co-sponsored with other organisations.
SCAR’s three Science Groups are:

- GeoSciences
- Life Sciences
- Physical Sciences

In brief, they are responsible for:

- **Sharing** information on disciplinary scientific research,
- **Identifying** research areas or fields where current research is lacking,
- **Coordinating** proposals for future research,
- **Establishing** Scientific Programme Planning Groups to develop formal proposals to the Delegates, and Action and Expert Groups to address specific research topics within the discipline.
Past Antarctic Ice Sheet Dynamics - PAIS
This Scientific Research Programme aims to improve understanding of the sensitivity of East, West, and Antarctic Peninsula Ice Sheets to a broad range of climatic and oceanic conditions and to improve confidence in predictions of ice sheet and sea level response to future climate change and ocean warming.

Solid Earth Responses and influences on Cryospheric Evolution - SERCE
This Scientific Research Programme aims to advance understanding of the interactions between the solid earth and the cryosphere to better constrain ice mass balance, ice dynamics and sea level change in a warming world.
State of the Antarctic Ecosystem - AntEco

This Scientific Research Programme aims to increase the scientific knowledge of biodiversity, from genes to ecosystems that, coupled with increased knowledge of species biology, can be used for the conservation and management of Antarctic ecosystems.

Antarctic Thresholds - Ecosystem Resilience and Adaptation - AnT-ERA

This Scientific Research Programme aims to provide a platform for the exchange of knowledge and for the support of research on biological processes at ecological time scales especially related to environmental change.
Astronomy and Astrophysics from Antarctica - AAA

Aims to coordinate astronomical activities in Antarctica in a way that ensures the best possible outcomes from international investment in Antarctic astronomy, and maximizes the opportunities for productive interaction with other disciplines.

Antarctic Climate Change in the 21st Century - AntClim21

Aims to deliver improved regional projections of key elements of the Antarctic atmosphere, ocean and cryosphere for the next 20 to 200 years and to understand the responses of the physical and biological systems (through multi-disciplinary collaboration) to natural and anthropogenic climate drivers.
POLICY

• The work of SCAR has a direct link to policies created to address environmental protection and practices in Antarctica, as well as global agreements regarding impacts of climate change.

• SCAR’s Standing Committee on the Antarctic Treaty System (SCATS) is responsible for coordinating the scientific advice presented to the Antarctic Treaty Consultative Meetings.

• The Antarctic Environments Portal provides an important link between science and policy by making science-based information available to the Antarctic Treaty System's Committee for Environmental Protection (CEP) and all the Antarctic Treaty nations.
SCAR is committed to helping scientists in all of its Member countries to:

- participate in understanding scientifically the physical, biological, chemical and geological processes at work in the Antarctic region,

- to use that understanding to predict change both there and elsewhere in the world,

- to provide objective and independent advice to policy makers, especially the Antarctic Treaty System.

SCAR's Capacity Building activities are co-ordinated by the **SCAR Capacity Building, Education and Training Committee (CBET)**.
SCAR Fellowships

Two programmes have been created to build research capacity: **Early-Career Fellowships** and **Visiting Professor Awards**.

**Early-Career Fellowships** enable early-career researchers to join a project team from another country, opening up new opportunities and often creating partnerships that last many years and over many Antarctic research seasons.
Medals

Peer recognition is a way of rewarding and highlighting those who exemplify the best of the Antarctic community and serve as models for the next generation. SCAR created the medals to provide this recognition:

- Medal for Excellence in Antarctic Research
- Medal for International Coordination
- SCAR President’s Medal for Outstanding Achievement
EVENTS

- SCAR is charged with the initiation and international co-ordination of Antarctic and Southern Ocean research beneficial to global society.

- To do this, SCAR brings researchers together to share their latest results, discuss new ideas, and provide opportunities to develop new projects.

- To that end, SCAR organises several conferences and symposia:
  - Open Science Conference (every 2 years)
  - Antarctic Biology Symposium (every 4 years)
  - International Symposium on Antarctic Earth Sciences (ISAES) (every 4 years)
  - Humanities and Social Sciences Conference
Organizational Arrangements
This Expert Group aims to compile and integrate all existing Antarctic near-surface and satellite magnetic anomaly data into a digital database.
Antarctic Biodiversity Informatics (EG-ABI)

This **Expert Group** aims to foster the application and development of biodiversity informatics (computationally-driven biodiversity science and information processing) in the SCAR community. It does this by coordinating and participating in a range of projects across the SCAR biodiversity science portfolio.
ICED is an international multidisciplinary programme launched in response to the increasing need to develop integrated circumpolar analyses of Southern Ocean climate and ecosystem dynamics.

This group is co-sponsored as a regional programme of the Scientific Committee on Oceanic Research (SCOR) and Future Earth's Integrated Marine Biosphere Research (IMBeR) project.
This **Expert Group** aims to promote research on the estimation of the mass balance of ice sheets and its contribution to sea level, facilitate coordination among the different international efforts focused in this field, propose directions for future research, integrate the observations and modelling efforts, as well as the distribution and archiving of the corresponding data.

This group is co-sponsored by SCAR, the International Arctic Science Committee (IASC) and the WCRP Climate and Cryosphere Project (CliC).
This **Expert Group** aims to obtain insight into the development of how Antarctic research was institutionalized, to study to what degree research in Antarctica has been driven by scientific criteria and to what extent compromises were made in the light of political barriers and logistical limitations.
This Expert Group aims to bring together researchers in the humanities and social sciences with an interest in the Antarctic region, facilitate the exchange of news, publications and research ideas, organize regular conferences and workshops, and organize research projects around different topics.
SCAR’s Standing Committee on Antarctic Data Management (SCADM) facilitates co-operation between scientists and nations with regard to scientific data, and advises on the development of the Antarctic Data Directory System.
REference Antarctic Data for Environmental Research (READER)

**Met-READER**
a database containing monthly mean surface and upper air climatological data derived from the in-situ meteorological observations made at Antarctic stations with long-term records, including temperature, surface pressure, wind speed/direction and geopotential height.

**Ice-READER**
a list and interactive maps showing the locations of all the cores that have been collected as part of the International Trans-Antarctic Science Expedition and other initiatives that includes data on the depth of the core, sampling frequency, time coverage, mean snow accumulation, chemical analysis and site elevation.

**Ocean-READER**
a portal to oceanography data that may be of interest to those concerned with climate change at high southern latitudes, mainly focusing on temperature, salinity and current data.
Additional material
Antarctic Permafrost and Soils (ANTPAS)

This **Expert Group** aims to develop an internationally coordinated, web-accessible database and monitoring system on Antarctic permafrost and soils.
Antarctic Volcanism (AntVolc)

This **Expert Group** aims to promote the study of Antarctic volcanism, facilitate regional correlations and work towards establishing Antarctica as a high-profile site for studying volcanic processes, especially but not solely petrology and glaciovolcanism.
This Action Group aims to identify highest-priority areas where lineaments and/or apparent tectonic block boundaries intersect with outcrops, provide improved geological maps, improve connections to adjacent continents within Gondwana/Rodinia and project the knowledge of these into Antarctica, and identify worthy drill sites for basement recovery and connect to other Antarctic drilling communities.
This **Expert Group** aims to oversee the development of geodetic infrastructure across the Antarctic Continent to facilitate the monitoring of its physical processes and help coordinate various infrastructure associated with earth monitoring techniques such as the Global Navigation Satellite System (GNSS), gravity meters as well as the installation of tide gauges to monitor sea level change.
This Action Group aims to develop a Code of Conduct for research, protection and ongoing management on and in areas of geological and geomorphological significance within the Antarctic.
This **Action Group** aims to facilitate an international effort to gather both rock and surficial deposit information and compile it into a GIS framework that will underpin studies of glacial dynamics and climate change.
This Expert Group aims to answer a variety of space-weather-related needs through ad hoc data sharing and model development.

This group is co-sponsored by Geosciences and Physical Sciences Groups.
This **Expert Group** aims to design and implement an enhanced digital database that contains bathymetric data available south of 60°S latitude, leading to the design of a consistent bathymetric chart of the Southern Ocean.
This **Expert Group** aims to establish a biologically focussed, integrated and coordinated Antarctic-wide observation system, to identify and track environmental variability and change at biologically relevant scales, and to use this information to inform biological, physical, and earth science studies.

**This group is co-sponsored by SCAR's Life Sciences, Physical Sciences and Geosciences Groups.**
This *Action Group* aims to support and further develop an international community on sea-ice biogeochemistry, to stimulate the interaction between experimentalists and modellers working on this topic, and to help the community articulate research priorities and identify optimized and cost-effective approaches and research platforms in internationally resource-limited times.
Southern Ocean Acidification

This Action Group aims to produce an assessment of the ocean acidification in the Southern Ocean including the fields of marine carbonate chemistry, global and regional modelling, marine ecology, ecotoxicology/physiology and paleoceanography.

This group is co-sponsored by SCAR's Life Sciences and Physical Sciences Groups.
This **Expert Group** was established to assist the development and expansion of the CPR research in the Southern Ocean and Antarctic waters, the group now focuses on the Quality Assurance and Quality Control (QA/QC) of the data and maintaining the highest methodological standards in CPR sampling and taxonomic methodology across the SO-CPR Survey laboratories.
This **Expert Group** is tasked with providing expert knowledge and research leadership in all matters related to birds and mammals in the Antarctic, in order to support research that will quantify the role of birds and marine mammals in the Antarctic marine and terrestrial ecosystems.
Integrated Science for the Sub-Antarctic (ISSA)

This Action Group aims to provide a comprehensive overview of past and current sub-Antarctic science, to identify pressing science questions for current and future work based on national priorities, strengths, and the 1st SCAR Horizon Scan questions, identify key lessons for science, conservation, and policy across the region, and develop a network of scientists across the region, including support for early-career researchers.
This **Expert Group** aims to coordinate knowledge and international experience of physicians, psychologists, human physiologists and biologists who are actively engaged in medical support of Antarctic activity, as well as biomedical research in the Antarctic. This effort includes active linkages and integration to work in human biology and medicine in the Arctic, Space missions, and other extreme, remote and austere environments.

This group is jointly sponsored by SCAR and the Council of Managers of National Antarctic Programs (COMNAP).
Remote Sensing of Birds and Animals

This Action Group aims to develop a satellite-based, Antarctic-wide, remote sensing approach to monitor bird and animal populations.

This group is co-sponsored by SCAR’s Life Sciences and Physical Sciences Groups.
This **Action Group** aims to organise an international, large-scale campaign to investigate clouds and aerosols in Antarctica through a series of special observing periods, when intensive ground-based measurements would be made at the same time as in-situ measurements using instrumented aircraft.
This **Expert Group** aims to review research into our current understanding of past and possible future climate-related changes in the physical environment of the Antarctic and Southern Ocean, and the impact on the terrestrial and marine biota.

The group is responsible for preparing an annual update on Antarctic climate and impacts for the Antarctic Treaty Consultative Meeting.
Antarctic Sea-Ice Processes & Climate (ASPeCt)

This **Expert Group** aims at improving our understanding of the Antarctic sea ice zone through focussed and ongoing field programmes, remote sensing and numerical modelling.
Forum for Research into Ice Shelf Processes (FRISP)

This **Expert Group** aims to coordinate the community engaged in research on the glaciological, oceanic and atmospheric processes governing the behaviour of ice shelves that are key to the ice sheet contribution to sea level change.
This **Expert Group** aims to coordinate international collaboration between ice-core scientists, engineers, and drillers to aid in providing information about past climate and environmental conditions on timescales from decades to hundreds of millennia.

This group is supported by the Past Global Changes (PAGES), SCAR and the International Association of Cryospheric Sciences (IACS).
Operational Meteorology in the Antarctic (OpMet)

This Expert Group aims to establish and nurture links between groups working in the area of operational meteorology in Antarctica, such as the Antarctic Meteorological Observation, Modelling, and Forecasting Workshop Group, and the WMO EC-PHORS (Panel of Experts on Polar and High Mountain Observations, Research and Services), helping to facilitate monitoring of the meteorological observations that come from Antarctica.
Polar Atmospheric Chemistry at the Tropopause (PACT)

This Expert Group aims to improve understanding of the distribution and variability of ozone in the polar upper troposphere – lower stratosphere (UTLS) region and the feedbacks of ozone changes to polar climate.
This Action Group aims at quantifying the effects of the solar activity on the near-Earth environment (Geospace) and the planet's geomagnetic, plasma, and atmospheric domains.
This **Expert Group** aims to coordinate the discussion and communication of scientific advances in the understanding of climate variability and change in the Southern Ocean, and advise CLIVAR, CliC, and SCAR on progress, achievements, new opportunities and impediments in Southern Ocean research.

This group is co-sponsored by WCRP Climate and Ocean - Variability, Predictability, and Change (CLIVAR), WCRP Climate and Cryosphere Project (CliC), and SCAR.
This Action Group aims to examine climate processes linking the Tropics to Antarctica.
SOOS is an international initiative with the mission to facilitate the collection and delivery of essential observations on dynamics and change of Southern Ocean systems to all international stakeholders (researchers, governments, industries), through design, advocacy and implementation of cost-effective observing and data delivery systems.

SOOS is co-sponsored by SCAR and the Scientific Committee on Oceanic Research (SCOR).
In recent years, a community has developed with interests in the social sciences and humanities, including the history of Antarctica.

The emergence of this topic in the Antarctic community has been spurred by the inclusion of the “human dimensions” as a major theme during the International Polar Year 2007-2008.

While this theme was of particular relevance to the Arctic, in recognition of the importance of indigenous peoples, it was evident that such activities are also significant in the Antarctic region and therefore to SCAR.
**Data, Maps and Publications**

SCAR promotes free and unrestricted access to Antarctic data and information by promoting open and accessible archiving practices. SCAR aims to be a portal to data repositories of Antarctic scientific data and information.

SCAR encourages the community to make maximum use of all data; to develop and operate mechanisms to facilitate the collection, storage, retrieval and dissemination of data and information for the common good; and to ensure that these mechanisms are effective.
SCAR is proud to share with you our new SCAR Library which brings together decades of SCAR documents, group reports, strategy documents and more into a searchable database.

- Newsletters
- Reports and Bulletins
- Meeting Papers
- Science Publications
- Antarctic Climate Change and the Environment Reports
Antarctic Master Directory (AMD)

The AMD is the largest collection of Antarctic data set descriptions in the world, holding over 7700 dataset descriptions from 25 countries.
Biodiversity.aq establishes and supports a distributed system of interoperable databases, giving easy access through a single internet portal to a set of resources relevant to research, conservation and management pertaining to Antarctic biodiversity (*also known as ANTABIF, the Antarctic Biodiversity Information Facility*).
Antarctic (Terrestrial) Biodiversity Database

An online database of terrestrial species that captures all recorded species observations and their locations from the Antarctic and subantarctic, including information on taxonomy, collections and observations, bioregions, and alien species.
Continuous Plankton Recorder Database (CPR)

A high quality dataset for the purposes of mapping plankton biodiversity: monitoring and development of models at seasonal, inter-annual, decadal, and spatially local and global scales; and providing core plankton data for ecosystem models.
Seismic Data Library System (SDLS)

SDLS provides open access to all multichannel seismic reflection (MCS) data collected south of 60° S.
Science in Antarctica relies on a consistent geographic framework. SCAR encourages the community to share its information to make maximum use of all data; to develop and operate mechanisms to facilitate the collection, storage, retrieval and dissemination of data and information for the common good; and to ensure that these mechanisms are effective. One of the major outcomes of combining a consistent geographic framework with available data are resulting maps with the best available information.
Antarctic Digital Database (ADD)

A compilation of the best international topographic mapping for Antarctica at scales between 1:250,000 and 1:10 M that can be viewed on a range of vector and satellite image backdrops. The underlying data can be downloaded free of charge in a range of formats for onward work in desktop GIS.
Composite Gazetteer of Antarctica (CGA)

A searchable database of all Antarctic place-names from each country active in Antarctica including the names of features south of 60° S, both terrestrial and undersea or under-ice.
A catalogue of international maps for Antarctica is compiled and maintained by the Australian Antarctic Division Data Centre, containing entries for over 5000 hard copy maps from 26 countries, and about 1000 digital maps from five countries.
Antarctic Digital Magnetic Anomaly Project (ADMAP)

A digital database of all existing near-surface and satellite magnetic anomaly data collected in Antarctica and surrounding oceans south of 60 degrees.
A series of maps at 1:1M scale, together with a continent over-view map, to support Air Operations planning. The maps are compiled collaboratively by Belgium (in cooperation with Australia), Norway, the UK and USA. The maps and digital data are freely available for download.
Antarctic Bedrock Mapping (BEDMAP2)

A new suite of gridded products describing surface elevation, ice-thickness and the sea floor and subglacial bed elevation of the Antarctic south of 60° S.
International Bathymetric Chart of Southern Ocean (IBCSO)

An enhanced digital database that contains bathymetric data available south of 60°S latitude used to produce a consistent bathymetric chart of the Southern Ocean.
A downloadable collection of Antarctic geographical datasets which works with the free, open-source software QGIS and currently includes geography, glaciology and geophysics data, and will expand with contributions from the research community.