

Opportunities for large-scale and collaborative international research in Antarctica.

Peter Convey¹

¹ *British Antarctic Survey, Natural Environment Research Council, High Cross, Madingley Road, Cambridge CB3 0ET, United Kingdom*

The geographical scale, environmental extremes and challenging logistic practicalities of working in Antarctica are well known to all, and mean that cooperation and collaboration have been integral to Antarctic research since its inception, as well illustrated by the activities of the 1957-58 International Geophysical Year (IGY) that led amongst other things to the development of the Antarctic Treaty itself. Quite simply, the Antarctic itself drives the need for collaboration, and openness to collaborate characterises the Antarctic and polar sciences communities to a greater extent than for most other communities worldwide, and indeed than many Antarctic scientists realise themselves.

The scientific, environmental and societal challenges of today, with anthropogenic pressures affecting the planet and its environments in an unprecedented manner, only serve to further emphasise the key importance of developing yet further international cooperation and coordinated activity in Antarctic science. Antarctica's central position in the Earth System is well appreciated. Only by working at scales across the continent and beyond, and crossing 'traditional' disciplinary boundaries, will the Antarctic science community be able to answer key questions about Antarctica's role in the planet's responses to contemporary change. Strong impetus to support and develop this work has been given by the recent 'First SCAR Antarctic and Southern Ocean Horizon Scan', which sought to identify the key science areas and research questions to be addressed over the mid-term timescale of the next two decades, along with the enabling technologies and facilities required to do so.

In global terms, the Antarctic science community is small, with only a few thousand scientists across all disciplines actively visiting the entire continent and Southern Ocean in any given year. Despite its size, this community is very productive and influential. The Scientific Committee on Antarctic Research (SCAR) has played a central role in the coordination of the international Antarctic scientific community since the IGY, in the dual sense of supporting the development of the science itself and, importantly, providing independent scientific advice to the Antarctic Treaty System.

SCAR today provides a framework and many opportunities through which collaboration and cooperation are facilitated. Over recent years there has been increasing momentum across all Antarctic science disciplines to maximise the opportunity provided by science in Antarctica. SCAR's current generation of scientific research programmes are 'umbrellas', not funding science directly, and rather providing fora to catalyse scientific interaction and coordinated research. Without being selective or exhaustive, each programme (as well as SCAR's variously named working groups) seeds and supports the activities of targeted workshops and other meetings, the creation of major internationally coordinated initiatives (e.g. Antarctic Climate Change and the Environment, Southern Ocean Observing System, Continuous Plankton Recorder, ANDRILL, EPICA, a range of International Polar Year projects, etc). These communities then go on to coordinate major research campaigns across the Antarctic, as appropriate to the disciplines involved, with examples including the Census of Antarctic Marine Life, Aliens in Antarctica and, only last season, the 'SO-AntEco' cruise.

With this background, this presentation will focus on activities within the current SCAR biological science research programmes, and new and developing initiatives including Antarctic Aerobiology and the Antarctic Terrestrial and Near-shore Observing System, as examples of the opportunities for engagement and contribution integrating the scientific and operational capabilities of different national programmes.