DRAFT Preparation Form for Proposed IPY Activity

This WORD template is to assist in developing an agreed document for submission to IPY by June 30, 2005. Submissions to the IPO are to be made ONLY via the online version of this form which will be available at www.ipy.org.

1.0 PROPOSER INFORMATION

1.1 Title of Activity

Antarctic Climate Evolution

1.2 Short Form Title of Proposed Activity

Antarctic Climate Evolution

1.3 Activity Leader Details

First Name	Surname	
Robert	Dunbar	
Affiliation		Country
Stanford University		USA

1.4 Lead International Organisation(s) (if applicable)

SCAR (Scientific Committee on Antarctic Research	

1.5 Other Countries involved in the activity

United Kingdom	New Zealand	Netherlands	Italy
Spain	Germany	Australia	China
Japan	Argentina	Sweden	Canada
Belgium	France		

1.6 Expression of Intent ID #'s brought together in the proposed activity(Lead first)

NOTE: ACE doesn't replace or subsume any of the following EoI's. Rather it identifies these EoI's as being of interest to ACE goals. There will likely be other EoI's identified as such.

37	3	20	53	62	107	186	256	276	284
433	586	612	617						

1.7 Location of Field Activities (Arctic, Antarctic or Bipolar)

Antarctic

1.8 Which IPY themes are addressed (insert X where appropriate)

1. Current state of the environment		4. Exploring new frontiers	X
2. Change in the polar regions	X	5. The polar regions as vantage points	X
3. Polar-global linkages/tele-connections	X	6. The human dimension in polar regions	

1.9 What is the main IPY target addressed by this activity (insert X for 1 choice)

1. Natural or social science	X	3. Education, Outreach, Communication	
2. Data management		4. Legacy	

2.0 SUMMARY OF THE ACTIVITY *(maximum of 1 page A4)*

Antarctic Climate Evolution (ACE) is a new international initiative that promotes the exchange of data and ideas between research groups focussing on the evolution of Antarctica's climate system and ice sheet. ACE will exist to facilitate scientific exchange between the modelling and data acquisition communities for the purposes of project development and hypothesis testing. The broad outcomes of the program will be: (1) quantitative assessment of the climate and glacial history of Antarctica; (2) identification of the processes which govern Antarctic change, and those which feed back this change around the globe; (3) improvements in our technical ability to model past changes in Antarctica; and (4) precisely documented case studies of past changes, which models of future change in Antarctica can be tested against. ACE efforts will generally focus on a series of time periods from the onset of continental glaciation at around the Eocene-Oligocene boundary 34 Ma ago, to the last glacial maximum (LGM) through to the establishment of the present ice sheet configuration.

ACE developed as the scientifically crafted successor to the ANTOSTRAT (ANTarctic Offshore STRATigraphy) project, also conducted as an officially recognized SCAR program. The ANTOSTRAT program started in 1990 and officially came to an end in July 2002. The ACE proposal, as well as its project management structure and various subcomponents were developed through a series of well-attended international meetings held in 2002, 2003, and 2004. ACE was approved by SCAR as one of their 5 new scientific research programs in late 2004.

The ACE Rationale. Antarctica has been glaciated for approximately 34 million years, but its ice sheets have fluctuated considerably and are one of the major driving forces for changes in global sea level and climate throughout the Cenozoic Era. The spatial scale and temporal pattern of these fluctuations is subject to considerable debate. Understanding the response of large ice masses to climatic forcing is of vital importance because ice-volume variations impact global sea level and also alter the capacity of ice sheets and sea ice to act as major heat sinks/insulators. It is particularly important to assess the stability of the cryosphere in the face of rising CO_2 levels, as modelling of the climate shift from a warm, vegetated Antarctica to a cold, ice-covered state 34 Myrs ago suggests a powerful greenhouse gas influence. As Antarctica is a major driver of Earth's climate and sea level, much effort has been expended in deriving models of its behaviour. Some of these models have been successfully validated against modern conditions. Modelling the past record of ice-sheet behaviour in response to changes in climate (inferred from ice cores for example), paleoceanographic conditions (inferred from paleoecology and climate proxies in ocean sediments) and paleogeography (as recorded in landscape evolution) is the next step and will allow for modelling of the large and dynamic changes observed in geologic history.

ACE aims to facilitate research in the broad area of Antarctic climate evolution over a variety of timescales. The programme will link geophysical surveys and geological studies on and around the Antarctic continent with ice-sheet and climate modelling experiments. ACE is designed to determine both climate conditions and climatic changes during the recent past (i.e., the Holocene prior to anthropogenic impacts, as well as at the last glacial maximum and other Quaternary glaciations, when temperatures were cooler than at present) and the more distant past (i.e. the pre-Quaternary, when global temperatures were several degrees warmer than today). This new cross-disciplinary approach, involving climate and ice sheet modellers, geologists, and geophysicists will lead to a substantial improvement in the knowledge-base on past Antarctic climate, and our understanding of the factors that have guided its evolution. This in turn will allow us to build hypotheses, examinable through numerical modelling, as to how Antarctic climate is likely to respond to future global change. Equally important, the development of data-driven models for Antarctic climate will allow us to extend our results to the analysis and prediction of global climate variability.

2.1 What is the evidence of inter-disciplinarity in this activity?

ACE is by definition an interdisciplinary program as it aims to promote research at the intersection of terrestrial and marine geology and geophysics, glaciology, paleoclimatology, Paleoceanography, and ice sheet and climate modelling. The major questions that ACE is addressing cannot be answered through traditional disciplinary analysis but rather require insights derived from a wide variety of areas within the natural sciences.

2.2 What will be the significant advances/developments from this activity? What will be the major deliverables, including the outputs for your peers?

ACE is a program that serves mainly to stimulate and support the integration of Antarctic geologic and paleoclimatic data and expertise with the climate and glacial history modelling community. As such, specific deliverables include:

1) the sponsorship and execution of international scientific workshops;
2) international scientist and student exchanges,
3) sponsorship of edited volumes of scientific results; and
4) assistance with international coordination and funding of large ACE-associated field and modelling studies.

Scientific deliverables include:

1) quantitative assessment of the climate and glacial history of Antarctica;
2) identification of the processes which govern Antarctic change, and those which feed back this change around the globe;
3) improvements in our technical ability to model past changes in Antarctica; and
4) precisely documented case studies of past changes, which models of future change in Antarctica can be tested against.

2.3 Outline the geographical location(s) for the proposed field work (approximate coordinates will be helpful if possible)

Location(s)	Coordinates
ACE has no ACE-specific field programs but rather supports a variety	
of field efforts as described in ACE-associated IPY EoI's as listed in	
section 1.6 of this document.	
Field areas include the Drake Passage, the Antarctic Peninsula, the	
Western Ross Sea, the East Antarctic Margin and McMurdo Sound.	

2.4 Define the approximate timeframe(s) for proposed field activities?

Arctic Fieldwork time frame(s)	**Antarctic** Fieldwork time frame(s)
mm/yy – mm/yy	mm/yy – mm/yy
mm/yy – mm/yy	mm/yy – mm/yy
mm/yy – mm/yy	mm/yy – mm/yy

2.5 What major logistic support/facilities will be required for this project? (see notes)

These are covered under the individual	
project submissions. ACE is a support and data	
intergration umbrella.	

Further details –

2.6 How will the required logistics be supplied? Have operators been approached?

Source of logistic support	X for likely potential sources	X where support agreed
Consortium of national polar operators		
Own national polar operator		
Another national polar operator		
National agency		
Military support		
Commercial operator		
Own support		
Other sources of support (details)		

2.7 If working in the Arctic regions, has there been contact with local indigenous groups or relevant authorities regarding access?

3.0 STRUCTURE OF THE ACTIVITY

3.1 Origin of the activity(X for one choice)

Is this a new activity developed for the IPY period?	
Is this activity the start of a new programme that will outlive IPY?	
Is this a pulse of activity during 2007-2009 within an existing programme?	X
If part of an existing programme please name the programme -	

3.2 How will the activity be organised and managed? Describe the proposed management structure and means for coordinating across the cluster

We propose that the ACE Scientific Research Program be led by a steering committee of 10-12 persons. The committee must meet formally at least once a year, and conduct the rest of its business either remotely or when the majority of committee members are present at international symposia. Members will serve for a 3-year term, with the possibility of extension depending on contribution and performance. We propose that Martin Siegert and Robert Dunbar be identified as Chairs, to be replaced in 3 years time. The steering committee has a wide knowledge of thematic issues and has appropriate regional (field), technical and logistical experience. The following persons are nominated as the initial steering committee of ACE:

Martin J. Siegert – University of Bristol, UK, co-chair
Robert B. Dunbar – Stanford University, USA, co-chair
Robert M. DeConto – University of Massachusetts, USA, media and website
Fabio Florindo – Ist. Naz. di Geofisica e Vulcanologia, Italy, secretary
Damian Gore - Macquarie University, Australia
Carlota Escutia – University of Granada, Spain
Robert Larter – British Antarctic Survey, UK
Tim Naish – Institute of Geological and Nuclear Sciences, New Zealand
Ross D. Powell – Northern Illinois University, USA
Sandra Passchier – National Geological Survey, The Netherlands
Gary Wilson – University of Otago, New Zealand

The central function of ACE is to coordinate the integration of improved geological data and Antarctic paleoclimate modelling for a series of time periods from the onset of glaciation around the Eocene-Oligocene boundary 34 Ma ago, to the last glacial maximum (LGM) and the establishment of the present ice sheet configuration. Six subcommittees have been set up to coordinate scientific work within these timeframes. The sub-committee names, and their current

coordinate scientific work within these timeframes. The sub-committee names, and their current chairs, are as follows:

LGM-Holocene	Chair: Tony Payne (UK)
Pleistocene	Chair: Tim Naish (NZ)
Middle Miocene-Pliocene	Chair: Alan Haywood (UK)
Oligocene-Miocene	Chair: Rob DeConto (USA)
Eocene/Oligocene	Chair: Jane Francis (UK)
Radio-Echo Sounding:	Chair: Detlef Damaske (Germany)

The sub-committees provide the overall leadership, direction and management for their respective topics. The main functions of the committees are to:

- Develop and implement an action plan.
- Encourage and facilitate communication and collaboration among research scientists working on any aspects of Antarctic climate evolution pertinent to the respective topic.
- Ensure that activities of the committee are communicated and wherever possible, integrated with those of other time-based themes, modelling themes and process-based themes of the ACE programme.
- Investigate, develop and exploit avenues for future funding in support of ACE objectives.
- Advise the research community on the types of geoscience data required for palaeoclimate modelling and effective model-data intercomparison, and the critical locations for which such data are needed for the time periods listed.
- Provide advice/assistance as needed on technical issues related to geoscience field and laboratory programmes and to palaeoclimate modelling studies pertinent to the time periods listed.
- Promote data access and data sharing (and data-contributions to the SDLS, Antarctic data centres, and World Data Centres [WDC]) to facilitate and expedite data syntheses needed for developing new field programmes and enhancing palaeoclimate models.
- Summarize and report the results of these efforts to the scientific and wider community on an ongoing basis at workshops and symposia.
- Contribute to formal reporting that will be presented to SCAR every two years.

3.3 Will the activity leave a legacy of infrastructure and if so in what form?

ACE is envisioned as a 10-year program under the sponsorship of SCAR. ACE is open to the inclusion of new members and new collaborative projects and we expect the vision and membership to grow as the program develops. We anticipate that our organizational structure of a 10-12 member steering committee (with membership rotation) and 6+ sub-committees will be maintained throughout the 10-year project period. As we identify other groups with interests that are in alignment with those of ACE we will invite them to join and we expect that one or more new subcommittees may evolve by this process.

3.4 Will the activity involve nations other than traditional polar nations? How will this be addressed?

ACE is open to participation by any scientist or students interested in the ACE theme of integrating field observations and data with modelling activities. As a recognized SCAR program we have ready access to all national SCAR committees and contact organizations or contact individuals. Some of these nations are in fact, non-traditional polar nations. Core funding from SCAR itself allows us to be proactive in encouraging participation at ACE workshops by scientists from non-traditional polar nations. We intend to advertise ACE workshops and activities by publishing articles, reports, and event notices in widely circulated journals and newsletters.

3.5 Will this activity be linked with other IPY core activities? If yes please specify

It is difficult for us to know precisely the full spectrum of IPY core activities at this early stage in the development of the IPY portfolio of activities. However, ACE already has established a number of formal linkages with other SCAR programs such as Subglacial Antarctic Lake Environments (SALE), Antarctica and the Global Climate System (AGCS) and Evolution and Biodiversity in Antarctica (EBA). Each of these programs have proponents that have submitted one or more EoI's to the IPY.

ACE and SALE will interact in three ways. First, the paleoclimatic record contained in subglacial lake sediments will provide important new information from the interior of the continent. ACE and SALE will collaborate on the acquisition of such records. Second, the ice sheet history quantified through numerical modelling as part of the ACE programme will offer important constraints on the formation and development of subglacial lake environments. ACE will provide SALE with model results in order for the history of subglacial lakes to be established in the context of ice sheet and climate evolution. Third, the radio-echo sounding exploration of Antarctica planned by ACE will uncover the locations of subglacial lakes and the basal ice sheet conditions that govern their existence. We will provide SALE with such information to assist the planning of subglacial lake exploration.

Investigating Antarctic history over glacial-interglacial periods is appropriate to the study of both modern and ancient environments. ACE and AGCS aim to investigate this history as a component of much broader and distinct science plans. ACE contains expertise in ice-sheet/climate modelling, marine and terrestrial geology, marine geophysics and radio-echo sounding. AGCS includes expertise in atmospheric modelling and ice coring. This combined expertise covers the full suite of knowledge required to build a sub-committee on the Pleistocene history of Antarctica.

ACE and EBA have mutual interests in understanding past environments. For ACE such work is central to its programme of work. For EBA it is critical to evaluate how and why the present distribution and form of biota exists in Antarctica. Palaeoclimate information, collected and modelled through ACE will be made available to EBA. Members of EBA have been contacted; we are still waiting to hear from this SCAR program. Members of EBA will be encouraged to attend ACE meetings to discuss results and inform the ACE community about the various inputs the EBA programme requires.

In addition, ACE has relevance to several major international programmes. In particular several members of the ACE programme are also involved in the Antarctic Drilling Programme, ANDRILL. ANDRILL aims to acquire sedimentary records of past climate change from a variety of locations around the Antarctic Continent. ACE is able to support ANDRILL by offering small funds to assist with meetings, and helping the integration of numerical modelling and geological data. In addition, ACE has good connections with the science programme of the European Project for Ice Coring in Antarctica (EPICA). ACE can assist EPICA by facilitating comparison, integration and modelling of EPICA (and other ice coring) results with palaeoclimatic data from other sources (e.g. marine and lake sediment cores and terrestrial geological records). In particular, ACE can serve as a means by which the ANDRILL, EPICA and ice sheet modelling communities may integrate.

Finally, we note that the IPY EoI's listed below are of interest to ACE. We have contacted most of the lead proponents of these proposed activities to explore an affiliation with them and their involvement with ACE activities. Again, ACE is interested in facilitating the exchange of ideas, data, and people and will foster this through the hosting of scientific workshops, the sponsorship of personnel exchanges, and the editing of special ACE results volumes. ACE is not in the business of managing specific field programs in Antarctica.

A partial listing of EoI's that describe activities of interest to ACE:

3. Late-Glacial and Holocene Environments in the Ross Sea Embayment: Implications for the

Stability of the West Antarctic Ice Sheet.

20. Polar Ocean Gateways: The keys to understanding long-term global change (POLARGATES)

53. Getting the timing right: a co-ordinated approach to radiocarbon dating in the Antarctic

62. Bipolar Climate Machinery – A study of the interplay of northern and southern polar processes in driving and amplifying global climate variability (BIPOMAC)

107. Geodynamics of the West Antarctic Rift System (WARS) in Remote Ellsworth Land and its implications for the stability of the West Antarctic Ice Sheet

186. Antarctic continental margin drilling to investigate Antarctica's role in global environmental change (ANDRILL)

256. Investigations of the Cryospheric Evolution of the Central Antarctic Plate (ICECAP)

276. Ice-sheet evolution in the Amundsen Sea since the last glacial maximum - geological perspectives (ASEP-GEO)

284. Deep Ventilation and Ice Variability from proxy records (VEnICE)

433. Neogene Ice Streams and sedimentary processes on high-latitude continental margins (NICE-STREAMS)

586. The Dronning Maud Land Initiative: mapping bed topography & past ice sheet limits to provide a legacy for numerical modelling

612. Ice Quest: The Past and Future of Antarctica – a major documentary and outreach project for international public broadcasting

617. Web-based educational tool for schools on polar issues (EDTOOL)

3.6 How will the activity manage its data? Is there a viable plan and which data management organisations/structures will be involved?

Successful development, testing, and refinement of paleoclimate models depend on the accessibility of relevant observational data as well as output from the models themselves. Therefore ACE will encourage responsible archiving of data, samples, and model output to established data centers and repositories. Furthermore, through its website, ACE will establish a directory of such data centers and repositories to help researchers locate the data they need. ACE will also foster continued development of the Antarctic Data Library System for Cooperative Research (SDLS), which was set up under the former SCAR-ANTOSTRAT project, the successor to the ACE Program. The SDLS now contains most of the processed data from marine multichannel seismic surveys that have been carried out around Antarctica.

Much Antarctic paleoclimate data and marine geologic data is already archived within the World Data Center (WDC) system with mirror sites around the world. We propose to continue to use this archiving system. Although our SCAR-approved ACE implementation plan does not describe the development of a new ACE-specific long-term data/model repository, we are willing to consider a move in this direction if our progress suggests that this would be useful.

3.7 Data Policy Agreement (Place X in box for agreement)

Will this activity sign up to the IPY Data Policy (see website)	X

3.8 How will the activity contribute to developing the next generation of polar scientists, logisticians, etc.?

ACE will endeavour to support and encourage the next generation of Antarctic scientists in several ways. We will encourage young scientists to take part in ACE workshops by offering bursaries for travel and subsistence. Although the level and number of the bursaries will be dictated by funds available, it is hoped that at least two bursaries will be available for each workshop/meeting. The condition of each bursary will be a report by the holder about their research and workshop experiences, which will be posted on the ACE website. We will also facilitate an exchange scheme between our respective institutions to allow young scientists to take part in fieldwork and to sample the research culture of other nations.

3.9 How will this activity address education, outreach and communication issues outlined in the Framework document?

ACE's founding goal is to facilitate scientific exchange regarding interactions between the global climate system and the Antarctic ice sheet between different communities of scientists within a fully international venue. As such, ACE is primarily an outreach and communication program. In this regard, we have already mapped out a series of 6 thematic ACE workshops to take place between now and 2008 focussing on ACE activities. These workshops will be widely advertised and involve an open application process wherein we expect to draw new scientists into the program.

ACE has already constructed a website to inform the public, media, schools and colleges, and scientists about the progress of the project (see www.ace.scar.org).

ACE will facilitate the preparation and posting of an online lecture series that describes the findings and outcomes of the ACE program. These will be made available to schools, colleges, universities, the media, and natural history museums via the ACE website (www.ace.scar.org). These lecture materials will comprise downloadable power-point presentations.

ACE will encourage the involvement and development of new scientists as described in section 3.8 above.

ACE has already established a strong record of publishing scientific findings in peer-reviewed journals (e.g., papers in Nature and Geology, plus special issues of Global and Planetary Change (vol. 45, 2005) and Palaeogeography, Palaeoclimatology, Palaeoecology (vol. 198, in press). An edited book on ACE is being planned for publication in 2007.

ACE's current plans for outreach, education and data management are in line with SCAR advice, yet during IPY we are planning to expand these activities to follow the guidelines listed in the IPY Framework Document. This expansion will include working with some of the other IPY projects that have explicit education and public outreach components (such as EoI #'s 617 (Web-based educational tool for schools on polar issues (EDTOOL)), 612 (Ice Quest: The Past and Future of Antarctia – a major documentary and outreach project for international public broadcasting), and 186 (Antarctic continental margin drilling to investigate Antarctica's role in global environmental change (ANDRILL))). Integrated results from ACE's model/data comparisons and analyses provide a useful route to the "big picture" view that often captures the imagination of the public and lay scientists. Regular communication and coordination with the leaders of the EoI's mentioned in section 1.6 is planned to facilitate the translation of ACE results to individuals in each project working on education and outreach activities. In addition, during the IPY period, we will produce and post an electronic newsletter on the ACE web-site that describes ACE-related activities and findings. This newsletter will be produced on a biannual basis.

3.10 What are the proposed sources of funding for this activity?

ACE receives a small amount of core funding each year directly from SCAR. We expect that these distributions will at least continue through and beyond the IPY period. In practice, following the example set by ANTOSTRAT, we expect to use our SCAR resources as seed funding to attract matching funds from national funding agencies to support research workshops and scientist exchanges. ACE does have a number of special ACE-affiliated projects for which funding is being sought externally, for example:

Work on the last glacial maximum will be funded initially through a UK-NERC application, organized by Tony Payne.

Pleistocene work will be funded through applications to ANDRILL (EoI # 186, both the McMurdo Ice Shelf Project in 2006-2007 and the Southern McMurdo Sound Project in late 2007), SHALDRILL, IODP, the New Zealand Marsden Fund and, possibly, IMAGES (International Marine Geosciences Program).

Both Mid Miocene and Pliocene, and the Eocene-Oligocene work, will be the foci of a future proposal for ANDRILL drilling, aided by a proposed UK-NERC consortium grant.

Radio-echo sounding research will be funded by a series of applications to national funding agencies, including the USA, UK and Germany. Much activity will be planned for the IPY period, 2007-9.

We anticipate that other IPY projects that might fall under the ACE purview as identified in the EoI submissions will also be applying for external funds in cases where field work is proposed.

3.11 Additional Comments

NOTE: ACE doesn't replace or subsume any of the following EoI's that were also listed in section 1.6. RATHER, it identifies these EoI's as being of interest to ACE program goals. There will likely be other EoI's identified as such. These EoI's should at present also pursue their own submission to IPY. We anticipate that ACE will affiliate with the scientists involved in each of these EOI's by inviting them to join ACE subcommittees, to participate in planning meetings and scientific workshops, and by providing a venue for them to exchange data and ideas across scientific communities and in an international setting.

37, 3, 20, 53, 62, 107, 186, 256, 276, 284, 433, 586, 612, 617

If it is therefore inappropriate for these EoI ID numbers to be listed in section 1.6, please remove them.

4.0 CONSORTIUM INFORMATION

4.1 Contact Details

	Lead Contact	Second Contact
Title	Dr.	Dr.
First Name	Robert	Martin
Surname	Dunbar	Siegert
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4.2 Other significant consortium members and their affiliation

Name	Organisation	Country
Robert M. DeConto	University of Massachusetts	USA
Fabio Florindo	Istituto Nazionale di Geofisica e Vulcanologia	Italy
Damian Gore	Macquarie University	Australia
Carlota Escutia	University of Granada	Spain
Robert Larter	British Antarctic Survey	UK
Tim Naish	Institute of Geological and Nuclear Sciences	New Zealand
Ross D. Powell	Northern Illinois University	USA
Sandra Passchier	National Geological Survey	The Netherlands
Gary Wilson	University of Otago	New Zealand

Notes for completing the WORD template for Proposed IPY Activities

** **The form is not for submission (that must be done online) - it is a tool for preparing the material required for completing the online form.**

** **This form is 7 pages long and the online form will match this length so if your completed WORD template is 7 pages you will have no problems in cutting and pasting to the online form**

** **We suggest you use 11 pt Times or Times Roman for text entry.**

Proposer Information

1.1 A full title for the proposed activity

1.2 Please provide a short title, ideally an acronym which will help with database searching.

1.3 This should be the person nominated to lead the activity. They may also be the primary contact with whom the IPO and JC will interact (see 4.1)

1.4 Where an international organisation is involved in the activity, they should be named (acronym is sufficient)

1.5 These are countries other than that of the activity leader. There will be more cells available on the web form. It is important that each activity demonstrate that there is internationalisation. Components of IPY activities can be operating at simply a national level but should synchronize with comparable groups in other nations activities to ensure internationalization at the IPY activity (core project) level.

1.6 The ID # for each EoI (from the Jan 14 exercise) involved in the activity should be named here. This will allow the IPO to track EoI's that have joined or left clusters identified in the original assessment.

1.7 Insert only one of the three choices.

1.8 Put an X against all of the themes for which the activity is relevant.

1.9 Put an X against one of the IPY targets which most closely describes the activity's main target

Activity Description and Time/Location Information

2.0 A description of what the activity entails and that includes reference to how the various component EoI's contribute to the overall activity. The description should focus on what will be undertaken within the activity and not how it will be organised. The text must not include graphics, equations or substantial formatting as these all cause problems for the database search engine. The JC only wants text entry in this field – leave the fancy presentations for the funding agency applications. Do not exceed 1 page.

2.1 The IPY is promoting interdisciplinary science and it is one of the IPY criteria that researchers should attempt to address.

2.2 This should focus on what will broadly emerge from the activity and if possible list some deliverables. It will be valuable to outline what outputs will be targeted at your peers – papers, workshops, e-media.

2.3 IPY activities should be polar-focussed (not necessarily located in polar regions. These fields should identify one or more areas where field activities will occur, e.g. West Antarctic Ice Sheet, Weddell Sea, Svalbard, Greenland. There is no need to include reference to Antarctica or Arctic (picked up in 1.7). If approximate coordinates are available this will allow distribution maps to be generated for IPY planning and promotional activities and assist logistic operators. An IPY activity does not have to include a field component but will do so in most cases.

2.4 IPY activities should occur during 2007-2009. Use the given format to define fieldwork periods.

2.5 This refers to major facilities and infrastructure and some examples (not comprehensive) are given below. Please use the fields to enter logistic requirements and use the text box to add further details.

Ice-breaker	Multi-instrumented platforms	Snow terrain vehicles
Ice strengthened research ship	Helicopters	Existing field stations
Ship-based drilling capability	Fixed wing geophysical aircraft	New field station
Ship recovery of buoys etc	Fixed wing transport aircraft	Observatories
Submarines	Rockets	Fuel depots
Autonomous Underwater Vehicle	Satellites	Ice drilling capability
Remotely Operated Vehicle	Radars	Rock-drilling capability

Please note if your project will share facilities with other IPY activities, or if there is capacity to support other projects as part of your activity (e.g. a marine biodiversity cruise could feasibly offer to deploy or recover buoys, moorings, etc., for an ocean/climate project).

2.6 Mark X against the 1 or more support options you would anticipate using and place an X against those which have been agreed or are being considered by logistic operators.

2.7 Access to certain Arctic areas is subject to licensing and should not be assumed will be granted so a dialogue with relevant authorities will be necessary. The Canadian IPY Office is a useful start point.

Structure of the Activity

3.1 Identify if your activity is a new activity limited to the IPY period, a new one that may be running for many years but will use IPY to kick start its programme, or an existing programme that will undertake a pulse of activity to coincide with the IPY period. If the latter please name the programme.

3.2 A major IPY criterion is "evidence of a viable management plan" and this is an opportunity to outline how the cluster will organise itself and ensure there is proper coordination. The Joint Committee for IPY 2007-2008 will be overseeing Polar Year activities but will not be managing the individual projects. It is anticipated that IPY projects will be self-managed, free-standing activities or be part of a planned or existing programme that has an established management structure. The JC will need to be satisfied that all proposals have realistic plans for structuring and managing activities. For the larger proposals the JC anticipates that a Project Steering Committee will be established.

3.3 Whilst IPY is envisaged as primarily a pulse of activity during 2007-2009, it is hoped that, as with many IGY initiatives, the initial activity leaves a legacy longer term which could be for example – an observational network, a field research facility, an accessible database, an education course or a health monitoring programme.

3.4 The IPY wants to broaden interest in the polar regions to include nations not traditionally involved in polar activities and has included this as one of its criteria. In some cases this may involve researchers joining clusters for field work but could also be, for example, through attendance of a workshop organised by the cluster.

3.5 The Joint Committee envisages a relatively small number of substantial core projects during IPY and it is anticipated that the JC will assist these projects to interact. Some activities are already considering formal and informal links with related clusters which will bring added value to these IPY activities.

3.6 IPY will generate enormous quantities of data and it should be accessible data so core projects will have to agree a data policy that will allow interaction across projects and early availability to the community. This field offers the opportunity to demonstrate that the components of the cluster have an agreed and valid approach to data management which can be considered alongside other approaches across IPY by the Data Management Sub-Committee to ensure effective coordination. Data organisations such as the World Data Centres, JCADM or national data centres.

3.7 IPY wishes all data to be freely available to the community (accepting certain exceptions e.g. human research) and all core projects will be expected to agree to sign up to the IPY Data Policy (which will be available on the website before the end of May 2005.

3.8 IPY has the development of the next generation of polar researchers as a high priority and IPY activities should show evidence of having considered how to address this issue.

3.9 All activities are expected to give consideration to addressing education, outreach and communication (mainly media focussed). Establishing a website will be a popular suggestion but interactions with schools, involving children/teachers in field activities, holding workshops, producing books or electronic media, collaborating with film-makers are all further possibilities.

3.10 It is recognised that many proposed activities will not yet have established funding lines but it should be demonstrated that valid sources of funding will be approached to support the activity.

3.11 This field can be used for any additional information that you feel is not addressed in the rest of the form or it maybe a specific piece of information that helps a national committee locate its nation's proposed activities.

Consortium Information

4.1 Details for the two primary people in each activity that the IPO can then contact where necessary on behalf of the consortium.

4.2 A list of other significant consortium members, their affiliation and country. The on-line form will also ask for email addresses. Up to 35 additional names can be added to this table, more will be available in the online version.