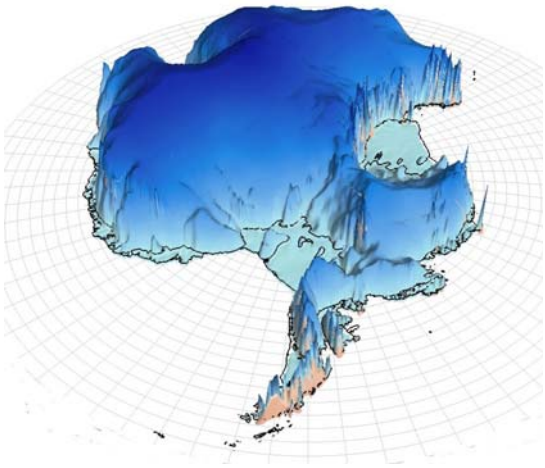
Antarctic Peninsula Climate Variability: History, Causes and Impacts



Interdisciplinary Workshop
Cambridge, UK, September 16-18 2004

Final circular and instructions to participants

The Antarctic Peninsula is one of the most rapidly warming areas on Earth. Understanding the cause of this dramatic regional change, its future predictability and likely impacts requires a truly interdisciplinary approach.

Dear colleague,

Thank you for your abstracts and for registering for the workshop. We had an extremely good response to the call for abstracts and consequently have had to make some very difficult decisions in selecting papers for the oral sessions. We apologise if you didn't get the slot you wanted but we have tried to put together a wide programme that satisfactorily represents the disciplines and allows some good-quality time to the poster sessions. We hope you find the workshop a stimulating one and enjoy you visit to Cambridge.

The following information is the last we are planning to send out, but if you have any further queries please don't hesitate to contact us.

Travel Instructions

By Air

London Stansted - For those travelling from overseas, the nearest international airport to Cambridge is London Stansted. Frequent bus (http://www.nationalexpress.com/neh.cfm) and rail (http://www.nationalrail.co.uk/) services connect London Stansted to Cambridge in less than one hour. There are direct flights to Stansted from many European cities (see http://www.baa.co.uk/main/airports/stansted/ for a list), but, at present, there are no direct flights from the Americas.

London Heathrow - From London Heathrow, there is a direct bus service which operates hourly from the central bus station and offers services direct to Cambridge, taking around 2.5 hours (see hyperlink above). The journey can also be made by train through London, but involves several changes and is only fractionally faster.

London Gatwick – There is a direct Gatwick-Cambridge bus service but, as the journey takes 4 hours, participants arriving via Gatwick may prefer to travel to Cambridge by rail (see rail hyperlink above). The best way to reach Cambridge by rail from Gatwick is to take a "Thameslink" train to King's Cross Thameslink station (NOT the "Gatwick Express" which takes you too London Victoria). A short walk then takes you to King's Cross mainline station, from where a twice-hourly train service operates to Cambridge (journey time around 50 minutes, total journey time from Gatwick approximately 2.5 hours).

By Rail

Cambridge is served by a twice-hourly fast train service from London King's Cross station and there are good connections from other parts of England. For rail timetable information see http://www.nationalrail.co.uk/planmyjourney.

By Road

Coach services connect Cambridge with many other cities. See http://www.nationalexpress.com for timetable information. We advise participants against travelling to the meeting by car. Cambridge is a small historic city, best explored on foot. All of the workshop venues are within easy walking distance of each other. There is no parking available at the Scott Polar Research Institute and limited parking at Downing College for those staying there. If you plan to bring a car and require a parking space at Downing, please let us know well in advance.

Arrival in Cambridge

You can find a map of Cambridge at http://www.visitcambridge.org/other/map3.pdf and at the end of this document.

Downing College and the Scott Polar Research Institute are a short taxi ride away from Cambridge railway and bus stations. Those with light luggage may prefer to walk. Participants who have

booked accommodation at Downing College should proceed to the main college entrance on Regent Street and collect their room keys from the Porter's Lodge.

Late arrivals

If you plan to arrive after 10:00 pm late please let us know and we will advise Downing College of your intentions. Downing College Porter's Lodge phone number +44-1223-334800

Registration

Registration for the workshop will commence at 1100 on Thursday 16th September at the Scott Polar Research Institute, Lensfield Road. We ask you to bring your talk to registration.

The Programme

The programme will have sessions addressing seven key science areas, each introduced by an invited speaker and with other shorter oral presentations. Two sessions are allocated for posters and we have sufficient space that all posters will be available at both sessions. There will be two workshop sessions with three separate groups meeting during each session.

Advice to speakers

When planning your talk or poster please remember that this is a highly interdisciplinary meeting and many in your audience will not be expert in your field. To get the best out of your audience may require that you spend a little time describing terms and techniques that might not be well-understood by scientists outside your immediate expertise.

We have allotted the invited speakers 30 minutes (including set-up and questions), in which to describe the state-of-the-art in their particular expertise/theme, and for the new gems of research they wish to lay before us. The other speakers will each be allotted 20 minutes (including set-up and questions).

Anna Nelson (SPRI) will be facilitating presentations during the workshop. Digital presentations will be given from a dedicated computer loaded with Windows NT and Microsoft Powerpoint 2000 (version SR-1 9.0.4537), and Internet Explorer and Adobe Acrobat Reader. Speakers will have control of this PC during their presentation. This PC has a web connection, but we don't recommend that this be used during presentations. Digital files should be brought on CD, USB memory stick, zip or floppy disk, and submitted at registration, or they can be emailed to aen27@cam.ac.uk prior to the workshop. Overhead and 35 mm slide projectors will also be available, but please make us aware of your requirement as soon as possible.

Advice to poster presenters

Poster sessions will be held in the West Lodge Room at Downing College on the Thursday and Friday afternoons. Please see the list below to find out which session your poster is scheduled for. Presenters in poster session 1 may put up their posters any time after 11:00 on Thursday. The poster boards will not be numbered and so early arrivals will guarantee their posters the more prominent positions. We would appreciate it if all posters could be removed at the end of poster session 2 on Friday evening as boards will be removed immediately after the session. The poster boards have a useable area of 120 x 120 cm. We will provide materials to fix them to the poster boards. Poster boards will be available from 11:00 on Thursday.

Workshop sessions

We hope that the three workshop sessions will produce substantive results. These are intended to highlight the importance of the issues surrounding the Antarctic Peninsula, and indicate to the wider community the degree to which we are working together to improve understanding. The three Workshop groups are:

History: A synthesis of terrestrial and marine palaeoenvironmental understanding (Leader: Mike Bentley, m.j.bentley@durham.ac.uk)

Causes: Current understanding of processes controlling Antarctic Peninsula climate change (Leader: John King, jcki@bas.ac.uk)

Impacts: An assessment of the importance of the recent climate change on the environment of the Antarctic Peninsula (Leader: Andrew Clarke, accl@bas.ac.uk)

Our intention is that the first two workshop sessions work towards producing high-level review papers that will summarise current understanding in these areas and will indicate where further research remains to be done. The output of the third workshop session will be an open report directed to the IPCC outlining the most significant recent findings on recent Antarctic Peninsula climate change and an assessment of the importance of these results. Each of these outputs will appear with due acknowledgement of those who have contributed and we urge you to be ready to participate in the workshop sessions.

To get a general idea of the seating required for each group, we would be grateful if you could notify us of which of the workshop sessions you intend to join. Please mail kms@bas.ac.uk giving the Workshop Group you intend to join (History, Causes or Impacts).

Further information

If you require further information please contact Kathy Salisbury (KMS@pcmail.nerc-bas.ac.uk) or one of the organisers (dgv@bas.ac.uk; m.j.bentley@durham.ac.uk; jcki@bas.ac.uk) directly.

Or call Kathy Salisbury (International) +44 1223 221368, or (from within the UK) 01223 221368, or David Vaughan – 01223 221643 (or in emergency 07729 425260).

Provisional Programme

	Thursday 16th September 2004	
11:00	Registration in the foyer of SPRI (please submit CDs etc containing your talk at registration)	
12:30	Lunch in the foyer	
13:15	Welcome - Housekeeping	
13:25	Introduction: Dr Colin P Summerhayes Executive Director of Scientific Committee on Antarctic Research	
	Oral session 1 - Palaeoclimate reconstructions from marine record	
13:30	Eugene Domack, Diana Duran, Amy Leventer, Scott Ishman, Sara Doane, Scott McCallum, Jim Ring and Robert Gilbert	Palaeoclimate reconstructions from marine records: Stability of the Larsen Ice Shelf and its regional perspective (Invited)
14:00	Scott Ishman, Scott McCallum, Phillip Szymcek, Michael Prentice and Eugene Domack	A Foraminiferal Record of Biotic Response to Changing Conditions of the Larsen Ice Shelf
14:20	David Heroy and John Anderson	Ice Sheet Extent and Subsequent Retreat of the Antarctic Peninsula during the Last Glacial Maximum (LGM)
14:40	Carol Pudsey, P. Morris, W. Jokat and C. Holz	The Palaeoclimate Archive In The Northwest Weddell Sea
	Oral session 2 - Palaeoclimate reconstructions from terrestrial records	
15:00	Dominic Hodgson	Palaeoclimate reconstructions from terrestrial records (Invited)
15:30	Coffee	
	Oral session 3 - Cryospheric impacts / ice shelf retreat	
15:50	Ted Scambos	Ice Shelf Retreat and Collapse in the Antarctic Peninsula (Invited)
16:10	Alison Cook	Glacier-front trends on the Antarctic Peninsula over the last 50 years
16:30	Andreas Vieli, Zhijun Du, Anthony Payne and Andrew Shepherd	Numerical modelling and data assimilation of recent changes of the Larsen ice shelf
16:50	Return to Downing College – Poster set up time	
17:20	Poster Session 1, West Lodge Room, Downing College (Including Reception)	
19:40	Conference Dinner - Jesus College (Upper Hall) *(Transport to Jesus College has not been arranged. Taxis can be ordered from the Downing College Porter's Lodge. Walking takes 15 – 30 minutes depending on your pace. Please be ready to take your seat at 19:45, dinner will be served promptly at 20:00)*	

Friday 17th September 2004		
	Oral session 4 -Impacts on ecosystems	
9:00	Andy Clarke and Peter Convey	Climate change and organisms: the Antarctic Peninsula as an example (Invited)
9:30	Langdon Quetin and Robin Ross	Changes in Two Species of Zooplankton Indicative of Ice-Covered Waters in Summer within the Palmer LTER Study Region
	Oral session 5 - Climate history from the instrumental record	
9:50	Phil Jones	The instrumental temperature record from the Antarctic (Invited)
10:20	Viktorie Šťastná and Petr Štěpánek	Air Temperature Trends in the Region of Northern Antarctic Peninsula and South Shetland Islands in 1950-2003
10:40	Gareth Marshall and Steven Colwell	The upper air record from Bellingshausen station, Antarctic Peninsula
11:00	Coffee	
11:15	Workshop Session 1	
12:45	Lunch in the foyer	
	Oral session 6 - The role of the oceans and sea ice in controlling Antarctic Peninsula climate variability	
14:00	John Klinck	Ocean and Sea Ice processes near the Antarctic Peninsula: present conditions and possible variations (Invited)
14:30	Doug Martinson	A Decade of WAP Upper Ocean Water masses
14:50	Michael P. Meredith, Mark A. Brandon, Andrew Clarke, John C. King, Ian A. Renfrew and Chris W. Hughes	Potential Effects of Antarctic Peninsula Climate Variability on the Physical Marine Environment
15:10	Sandra Barreira and Rosa Compagnucci	Antarctic Sea Ice variability in the Weddell, the Bellinghausen and the Amundsen Seas
	Oral session 7 - Climate modelling and analysis	
15:30	Michiel van den Broeke, Willem Jan van de Berg, Carleen Reijmer and Erik van Meijgaard	Regional modelling of Antarctic climate and change, 1957-2002. (Invited)
16:00	Robert A. Massom, S. E. Stammerjohn, R. C. Smith, M. J. Pook, R. Iannuzzi, N. Adams, D. Martinson, M. Vernet, C. Fowler, Y. Massom and H. R. Krouse	Major Impacts of Anomalous Atmospheric Circulation Around the Antarctic Peninsula in Late Austral Winter-Early Spring 2001
16:20	Dan Lubin and Robert A. Wittenmyer	Climatology and Variability of Mesoscale Cyclones in the Western Antarctic Peninsula and Weddell Sea Regions
16:40	A. Orr, G. Marshall, D. Cresswell, J. C. R. Hunt, J. Sommeria, C. Wang and M. Light	Enhanced warming trend over the Antarctic Peninsula
17:00	Poster Session 2, West Lodge Room, Downing College (Including Reception)	
19:00	Removal of posters and disperse to dinner (no arrangements made)	

Saturday 18th September 2004	
9:00	Workshop Session 2
10:30	Coffee
10:50	Plenary reports from workshop groups
11:20	Close

Poster Session 1 – Thursday 16 September 2004

Analysis of modern diatom floras from the Scotia Sea and Antarctic Peninsula: Is the Holocene fossil record anything but a relict assemblage?

Claire Allen, Jennifer Pike, Carol Pudsey, Catherine Stickley and Amy Leventer

Monitoring snow parameters on the Antarctic Peninsula using satellite data - a new methodological approach

Jorge Arigony, Helmut Saurer, Ricardo Jana, Jefferson C. Simões and Hermann Gossmann

Rock-magnetic and geochemical tracers of terrigenous provenance in glacial-marine sediments from the western Antarctic Peninsula

Stefanie Brachfeld, Matthew Gorring, Catherine Kissel and Carlo Laj

Flow dynamics of the Larsen Ice Shelf from satellite radar inteferometry

Zhijun Du, Andrew Shepherd

Glacial and glaciomarine sedimentary successions from the southern Bellingshausen Sea: archives for environmental changes in the Antarctic Peninsula region since the last glacial period

C.-D. Hillenbrand, R.D. Larter, C.J. Pudsey, J.A. Dowdeswell, C. Ó Cofaigh, J. Evans and P. Morris

Thalassiosira antarctica records of recent warming in the Antarctic Peninsula

Amy Leventer, Eugene Domack, Emily Constantine, Michelle Cooper, and Gary McMurtry

Seasonal and sub-seasonal diatom palaeoceanographic records from the last deglaciation, Palmer Deep, western Antarctic Peninsula

Eleanor Maddison, Jennifer Pike, Amy Leventer and Eugene Domack

Synthetic seismograms and acoustic facies of the Andvord and Schollaert Drifts: Antarctic Peninsula

Patricia L. Manley

Impact of Antarctic Peninsula climate change on Galindez Island ice cap dynamics

J. D. Shanklin, S.B. Kovalenok, G.P. Milinevsky

Reconstructing the glacial retreat history of Marguerite Bay, Antarctic Peninsula, since the Last Glacial Maximum: A Sedimentologic Approach.

Lisa Oakes, John Anderson

Late Quaternary ice-sheet dynamics in the southern Bellingshausen Sea as reconstructed from marine geophysical evidence

C. Ó Cofaigh, J.A. Dowdeswell, R.D. Larter, C.J. Pudsey, C.-D. Hillenbrand, J. Evans and P. Morris

Glacial flow on the Antarctic Peninsula: a decade of change?

Hamish Pritchard and David Vaughan

Changes in Larsen B ice shelf dynamics prior to breakup: satellite borne observations and modelling outcomes

W. Rack, H. Sandhaeger, H. Rott

Analysis of Outlet Glaciers on the East Coast of the Antarctic Peninsula

Claudia Riedl, Helmut Rott and Wolfgang Rack

Accelerated ice discharge from Antarctic Peninsula glaciers

Eric Rignot, Robert Thomas, William Krabill, Gino Casassa, Andres Rivera and Prasad Gogineni

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Landforms associated to the deglacial environment of Ecology Glacier, King George Island, Antarctica

Rosemary Vieira, Jefferson C. Simões, Maíra S. Rossato and Francisco E. Aquino

Poster Session 2 – Friday 17 September

Is the ENSO events related to Antarctic Sea Ice Concentration?

Rosa Compagnucci and Sandra Barreira

The Role of Zonal and Meridional Atmospheric Circulation in Winter Antarctic Peninsula Warming

Christopher Karmosky and Adam Burnett

Palmer, Antarctica long-term ecological research project: "Long-Term Ecological Research on the Antarctic marine ecosystem: Climate migration, ecosystem response and teleconnections in an ice-dominated environment"

H. W. Ducklow, PI; K. S. Baker, A. C. Clarke, W. R. Fraser, D. M. Karl, D. G. Martinson, L. B. Quetin, R. M. Ross, R. C. Smith and M. Vernet

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P-Band sounder instrument design for Antarctica

Juan Guijarro

What controls the winter ice extent in the Bellingshausen Sea?

Steve Harangozo

The impact of atmospheric circulation variability on Antarctic Peninsula summertime temperatures

John C. King and Nicole P. M. van Lipzig

A model study on the effect of the accumulation history on chemical tracers measured in ice cores from the Antarctic Peninsula

Nicole P.M. van Lipzig, Robert Mulvaney and John C. King

Increasing reflectivity of the Antarctic ocean-atmosphere system: Analysis of Total Ozone Mapping Spectrometer (TOMS) and passive microwave data for 1979–1994

Dan Lubin, Stephen Lynch, Rory Clarke, Esther Morrow,Steven Hart

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Interannual changeability of the ocean-atmosphere state in Argentine Island region

G.P. Milinevsky, Yu.I. Popov, V.V. Ukrainsky

Variability of Drake Passage Oscillation Index (DPOI) from 1952 to 2003 in the Antarctic Peninsula area

Mikio Naganobu and Kunio Kutsuwada

Influence of zonal wave 3 in the Southern Hemisphere atmospheric circulation on Antarctic sea-ice concentration

Marilyn Raphael

Nonlinear Paleoclimatology: Reconstructions in West Antarctica

David B. Reusch, Richard B. Alley and Bruce C. Hewitson

Climatology and atmospheric temperature warming trend for King George Island, Antarctica

Francisco E. Aquino, Jefferson C. Simões, Alberto W. Setzer and Francisco A. Ferron

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Climate Variability, Bio-optical Properties and Phytoplankton Productive in the WAP region

R.C.Smith, K. Ireson & M.Vernet

Updated assessment of surface lowering of the ice ramp at Rothera Point, Antarctic Peninsula

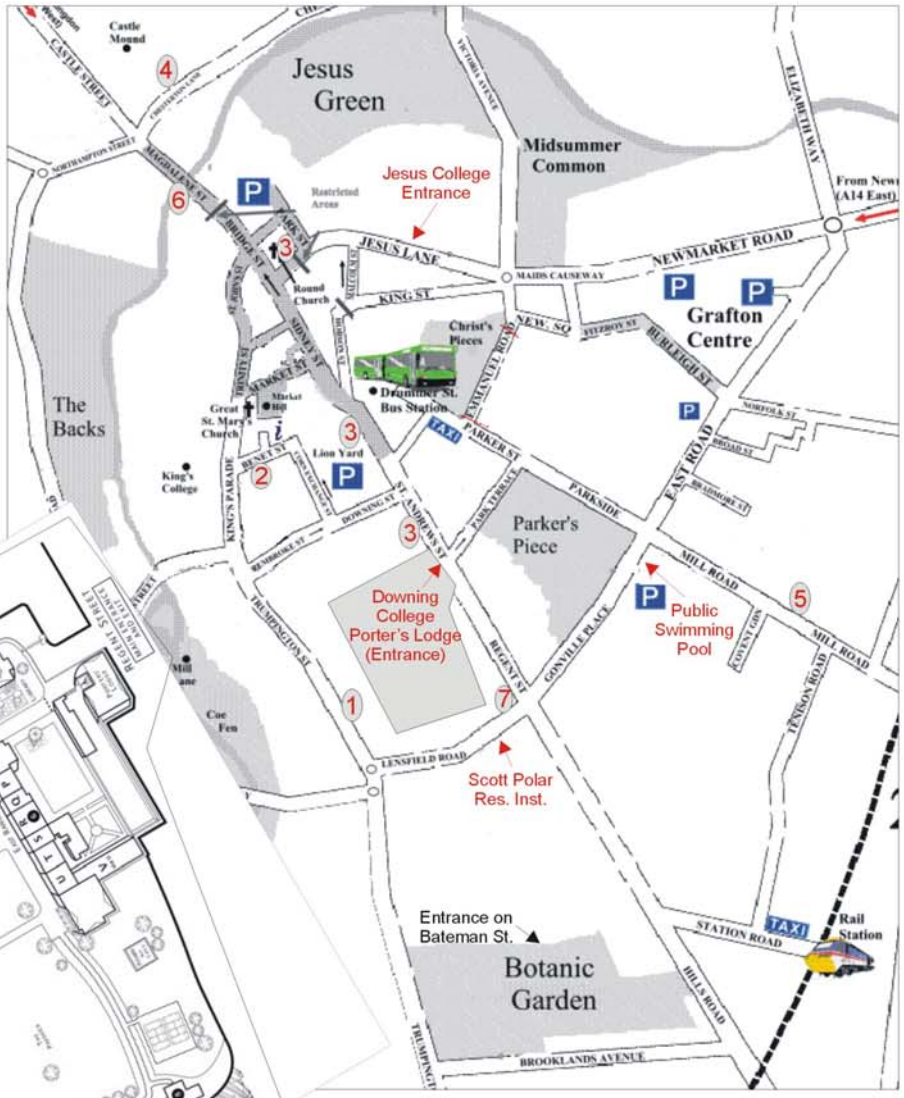
Andy M. Smith and David G. Vaughan

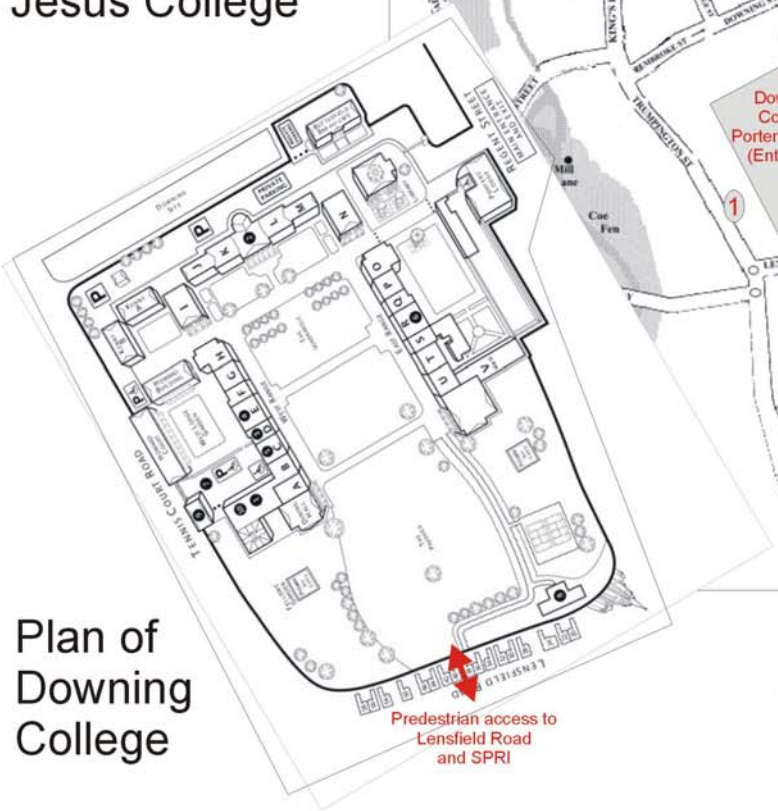
Climate warming and related phenomena at the region of Antarctic Peninsula

V. E. Tymofeyev.

Entrance to Jesus College

Plan of Cambridge City (not to scale)





Plan of Downing College

Selected Restaurants

1 - Brown's Restaurant (Big and bustling with a menu to suit all tastes, in a building that was once the Emergency Room for Addenbrookes Hospital!)
2 - The Eraina (Something of a Cambridge tradition, pokey and basic but excellent value, with the longest menu in the world)
3 - Pizza Express (three restaurants serving good pizza. The one on Jesus Lane is an architectural surprise - think Palladian)
4 - Arundel House Hotel (A bit expensive but good food in a quiet environment)
5 - Mill Road has several cheap ethnic eating houses (gets a bit "colourful" late at night)
6 - Galleria (the outside tables hanging over the river are pleasant when it's warm)
7 - Chato Singapore restaurant (A little expensive but close to Downing with top authentic food)

Downing College