

Graduate Certificate in Antarctic Studies (GCAS)

Survey

Gateway Antarctica

November 2003

Prepared by:
Yvonne Cook
9 December 2003

Overview and summary

- The University of Canterbury's Graduate Certificate in Antarctic Studies (GCAS) is a New Zealand Vice Chancellor's Committee-approved graduate-level course that runs over the summer period.
- GCAS was established in 1998 through a partnership between the University of Canterbury and Antarctica New Zealand also involving wide consultation especially with other interested tertiary institutions.
- GCAS provides its graduates with a multidisciplinary education in Antarctic affairs, with New Zealand focus, but based on the international knowledge and policy context.
- The course is coordinated by the Gateway Antarctica research centre at the University of Canterbury, and taught by academics and practitioners in Antarctica from around New Zealand and overseas
- The course is taken predominantly by people with a scientifically-oriented first degree.
- Most students taking the course are professionals taking leave from their career to be able to take the course.
- The majority of participants are New Zealand citizens or permanent residents. 10% of respondents came to New Zealand specifically to enrol in the course (mostly from the UK).
- GCAS has been very successful in stimulating and enabling the involvement of its graduates in Antarctic and Southern Oceans work after graduation. 52% of respondents currently, or at some stage since graduation from GCAS, have had direct or indirect involvement with Antarctica and/or Southern Ocean issues in their professional lives, with employers ranging from the Antarctic Heritage Trust, to NASA, to Antarctica New Zealand, to the Peruvian Diplomatic Service. Within this group, 24% regularly incorporate knowledge of Antarctica into their current professional work (in teaching, environmental work), and 7% are in professional positions with direct and regular involvement in Antarctic affairs. A significant proportion (23%) of graduates have gone on to Antarctic-related post-graduate research degrees in their disciplinary specialty.

Background to the GCAS

The Graduate Certificate in Antarctic Studies (GCAS) is a multidisciplinary, summer-only course. The course was developed in 1998 jointly between the University of Canterbury and Antarctica New Zealand, in consultation with government agencies, the New Zealand Antarctic community and the wider international Antarctic community. The course was approved by the Tertiary Resourcing Division of the Ministry of Education in October 1999. The course comprises 632 hours of study over a 14 week period. Although the course is hosted by the University of Canterbury the course has maintained a national and international focus. The course was coordinated for years 1 to 3 by Professor John Hay (University of Auckland) and Dr Brian Stewart (University of Otago). Following the establishment of Gateway Antarctica, the course has continued to be co-ordinated by Brian Stewart assisted by Professor Bryan Storey (Gateway Antarctica). Course tutors have been drawn from throughout the length and breadth of New Zealand. The international focus has been maintained via video links to the UK, US and Australia and through inviting visiting academics from the US, UK and Australia using the university Erskine Fellowship scheme.

Purpose and goals of the GCAS

The aim of the GCAS is to provide a contextual programme of study for graduate students and members of the professions who have an interest in Antarctica and the Southern Ocean. The programme has the following goals:

1. To provide students with sufficient disciplinary background in order to understand interdisciplinary issues in relation to Antarctica and the Southern Ocean.
2. To engage students in critical examinations of a selection of the contemporary scientific, environmental, social and political debates with respect to Antarctica and the Southern Ocean.
3. To translate classroom learning into practical field studies within the Antarctic environment and understand the constraints of working in such extreme conditions.
4. To stimulate able and motivated students to take post graduate studies or contribute more effectively to their profession and community in connection with Antarctica and the Southern Ocean.

Aims of this survey

The aim of this survey is to see if objective 4 above is being met. In particular, are graduates pursuing post-graduate research? Are they working in relevant professions or organisations? Are they able to make a significant contribution to their profession and/or community as a result of participating in GCAS?

Introduction

88 people have completed the GCAS in the five years since it was initiated in 1998. Of these 55 (62.5 %) are female and 33 (37.5 %) are male.

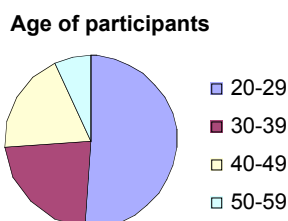
58 participants (66%) replied to the survey. Information for the remaining students was obtained when possible from other sources (such as GCAS application forms).

Where data are presented below, the second column indicates the number of people involved. This column is followed by the percentage that number represents of the people who responded to that question.

Background information

Age of participants at the start of the course (data for 69 participants)

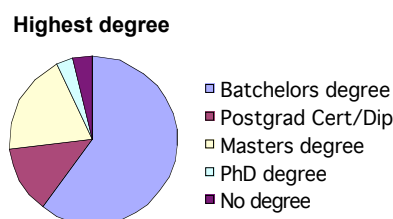
20-29 years	35	51 %
30-39 years	16	23 %
40-49 years	13	19 %
50-59 years	5	7 %



Qualifications prior to starting the course

Highest qualification (data for 78 participants)

1st degree (BSc/BA/LLB etc)	47	60 %
PostGrad Cert/Dip	10	13 %
MSc/MA	16	20 %
PhD	2	3 %
No degree	3	4 %



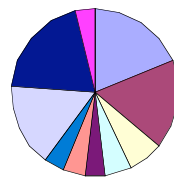
Degree subject (highest degree) (data for 75 participants)

58% of participants were qualified in one of seven fields before starting the course

Geography	14	18 %
Life Sciences	13	17 %
Chemistry/ Physics	5	6 %

Law	4	5 %
Environmental science	3	4 %
Landscape Architecture	3	4 %
Education	3	4 %

Degree subject



The remaining 42 % were qualified in the following fields:

2 participants in each of:

Geology; Resource studies/management; Commerce/business; Design; Vet science; Engineering, Art/Fine Art

1 participant in each of:

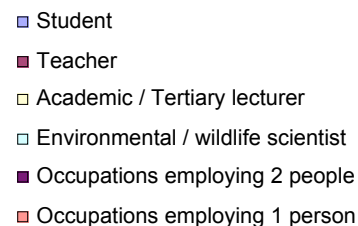
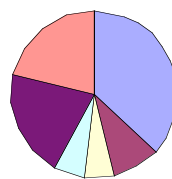
History; Psychology; Social Science; Medicine; Dentistry; Physical therapy; Philosophy; Biochemistry and nutrition; Maths; English; Film studies; Viticulture; Classics; Business certificate (non-degree); Pilot (non-degree); Diplomatic service (non-degree).

Occupation prior to starting the course (data for 76 participants)

59 % of participants had one of four occupations before starting the course

Student	28	37 %
Teacher	7	9 %
Academic/ tertiary lecturer	5	6.5 %
Environmental/ wildlife scientist	5	6.5 %

Occupation



The remaining 41 % had the following occupations:

2 participants were employed in each of the following fields:

Artist/Photographer; Sales/Marketing; Solicitor; Computer software; Information technology/GIS; Manager; Vet; Engineer.

1 participant was employed in each of the following fields:

Communications; Heritage advisor; Screen writer; Architect; Librarian; Administrator; Physiotherapist; Accountant; Dentist; Outdoor Recreation Tutor; Personal Coach; Business Trainer; Information services, Diplomat; Retired; Unemployed.

Areas of residence (NZ only) prior to the start of the course include the following:

Auckland	Lyttelton	Rotorua	Waikanae
Christchurch	Hamilton	Tauranga	Thames
Dunedin	Nelson	Upper Hutt	Otaki
Geraldine	Wellington	Masterton	
Gisborne	Blenheim	Taukau	

Citizenship (data for 73 participants)

66 participants (90 %) are either New Zealand citizens, participants from countries with reciprocal study rights or were already in New Zealand on work or study visas at the time of starting the course. Of these, 3 are Australian, 1 is North American and 2 are European.

7 participants (10 %) were not New Zealand citizens and were residing overseas prior to the course as follows:

UK	4
USA	1
Peru	1
Canada	1

Antarctic related work prior to course

3 people (4 %) were directly involved with Antarctic work before starting the course. Employers and number of employees were:

Antarctica New Zealand	1
Antarctic Visitor Centre, Christchurch Airport	1
Peruvian Diplomatic Service	1

Post-course data

Employment

Antarctic related work after the course

52 % of respondents have been or are currently involved in Antarctic related work.

The three people already working in an Antarctic field before the course continued to work in the same field after they had finished the course. 13 people became involved in work directly relating to the Antarctic immediately after the course (21 %). These data exclude people going onto further Antarctic study (see below).

Antarctica New Zealand (temporary and continuing)	4
Antarctic visitor centre (temporary and continuing)	2
Antarctic Heritage Trust	1
Students on Ice (Canada)	1
Antarctic tourism (UK)	1
Peruvian Diplomatic Service	1
NASA (USA)	1
Academia	2
Victoria University Antarctic Research Centre	1
Antarctic Research Assistant	1
Antarctic research (non-academic)	1

5 people (7 %) are currently directly involved with Antarctic issues in the course of their regular job. Employers and number of employees are:

Department of Conservation (New Zealand)	2
Ministry of Fisheries (New Zealand)	1
New Zealand Historic Places Trust	1
SPIS Ltd (IT company, New Zealand)	1

18 people (24 %) are currently incorporating their knowledge of Antarctica and Antarctic issues into their professional work as follows:

Teaching	8
Environmental work	8
Artistic work	2

Other work

20 participants (27 %) employed by the following organisations feel that their knowledge of Antarctic issues has helped them professionally in their job, even though their job is not directly related to the Antarctic:

NIWA, Department of Conservation, Department of the Environment, various Regional and District Councils such as Environment Canterbury, Landcare, New Zealand Water Environment Research Foundation, URS, Otago Museum and various secondary schools.

3 people (4 %) are currently actively increasing their skills and qualifications for specific Antarctic related careers.

Further Study

23 people (40 %) have gone on to further formal study (data for 57 participants).

Antarctic related study

23 % of respondents have gone on to Antarctic related post-graduate study and research comprising the following. (Research topics are included in Appendix A.)

Post-doctoral research	1
Doctoral research	3
Masters research	8
Antarctic related business studies	1

One Doctoral candidate currently holds the Antarctica New Zealand New Zealand Post Scholarship, awarded in 2002/2003 for a three year term. In addition, 1 person applied for postdoctoral funding and 1 person for Doctoral funding; neither were successful. 3 people firmly intend to do an Antarctic PhD in the future. 1 person has applied for science study grants through the Polytechnic and 2 people are lining up potential research collaborators.

1 person has gone on to self funded Antarctic research on history, Shackleton and leadership. 3 people have worked as research assistants, for VUW, for a Dry Valleys research project and with Antarctic satellite imagery.

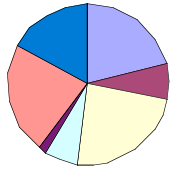
1 person decided that she is not suited to Antarctic field research.

Non-Antarctic study

17 % of respondents have gone on to non-Antarctic post-graduate study and research most of who were stimulated by the course to return to further study.

MSc	6
PhD pending	1
Medicine	1
General papers	1

Employment & further study, summary



- Antarctic related work
- Work involving some Antarctic issues
- Incorporating Antarctic knowledge into their work
- Antarctic knowledge has helped professional development
- Workers not included above and people not working or studying
- Antarctic related postgraduate study
- Other postgraduate study

Presentations, publications and media coverage

Academic presentations

19 people (25 %) have given Antarctic related academic lectures at tertiary institutions and conferences. Presentations will be made at 4 more conferences in the near future. These institutions and conferences are listed in appendix B.

Academic publications

6 Antarctic related papers have been published in peer-reviewed academic journals.

Professional presentations

Professional presentations (non-academic) have been made by 14 people (18 %) (see appendix C).

Other presentations and publications

This section excludes the numerous and varied presentations and publications given by former GCAS students who are now, or have been, employees of Antarctica New Zealand, Antarctic Heritage Trust or the Antarctic Visitor Centre. It also excludes the number of lessons and lectures given by the 15.5% of the graduates who are teachers or lecturers at Tertiary Institutions.

28 people (37 %) gave only non-academic talks resulting in more than 160 presentations. Groups spoken to are listed in Appendix C.

Non-Academic articles have been published by 15 people (20 %) (Appendix D).

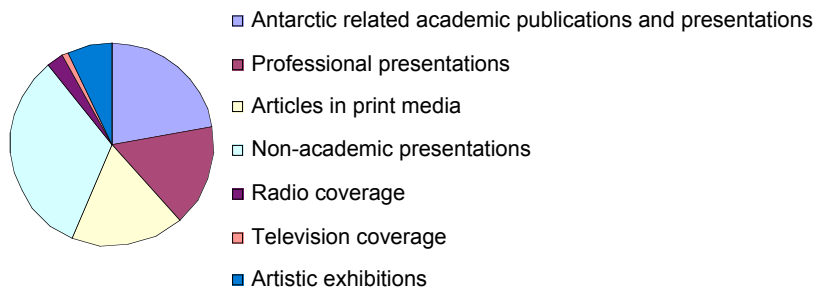
Radio coverage has been given to two people (3 %) (Appendix E)

Television coverage has been given to 1 person and a documentary proposal is being circulated around international television organisations.

Artistic Exhibitions

6 respondents (8 %) have been involved in public artistic exhibitions (Appendix F).

Presentations, summary



Other Endeavours

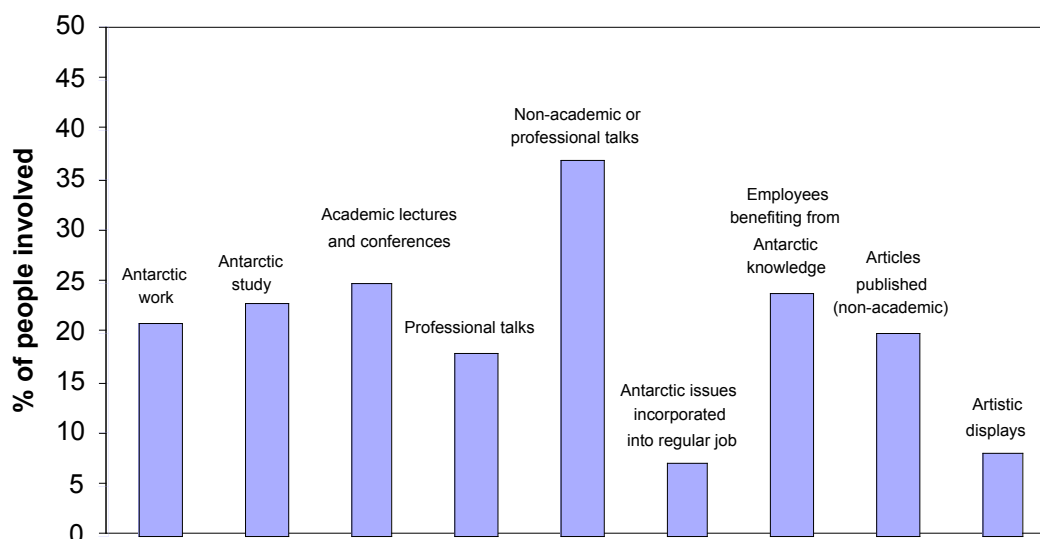
4 non-teachers were involved in preparation of material for schools

4 people are involved in organisational or administrative roles in the New Zealand Antarctic Society and many more attend meetings.

Summary

Involvement of GCAS graduates with Antarctic issues can be summarised as follows:

Antarctic work (full time, part time and temporary)	52%
Antarctic issues incorporated into non-Antarctic related job	27 %
Teachers, environmental scientists etc benefiting from Antarctic knowledge	24 %
Further study	40%
Antarctic study	23 %
Antarctic related academic lectures and conferences	25 %
Antarctic related professional talks	18 %
Non-academic or professional talks on Antarctic issues	37 %
Non-academic articles published on Antarctic issues	20 %
Antarctic artistic displays	8 %



Conclusions

The results of this survey indicate that the objectives of the GCAS are being met. In particular Antarctic related work and further study feature strongly amongst the occupations of graduates, and associated with these occupations are numerous professional and academic presentations and lectures. Many graduates whose work or study is not directly related to the Antarctic feel that the wide ranging content and learning methods included in the course and the experience of Antarctica as a case study for many topics and scenarios is a great benefit to their occupation (see Appendix H). Outside Antarctic related occupations, knowledge being gained by the graduates is being disseminated throughout a very diverse sector of the community in a variety of ways. This is indicated by the wide variety of backgrounds and personal skills the participants have when they arrive on the course and the wide range of professional and community based activities they are involved with after graduating. The GCAS has wide national reach, attracting students from throughout the country, and who have graduated from a variety of tertiary institutions. The course also attracts motivated international students who have gone on to pursue Antarctic related careers and studies.

Appendix A

Research topics

Post-doctoral research:

House-dust mite and cat allergens in the Antarctic (Medicine)

Doctoral research:

Remote site design management (Architecture)

Visual mapping of Antarctica (Geography)

Rock weathering (Geography)

Masters research:

Sustainable development of tourism in the Ross Sea region (Geography)

Regional analysis of surface mass balance in the Ross Sea region (Geography)

Antarctic science (Geography)

Antarctic environmental law (Law school)

New Zealand's Antarctic relationship in the environmental era (Geography)

Cumulative impacts in the McMurdo Dry Valleys (Regional and Resource Planning)

The sublime and the numinous in the context of Antarctica (Philosophy)

Appendix B

Research / tertiary institutions hosting lectures by GCAS graduates:

Canterbury University

Lincoln University

Waikato University

Massey University

Victoria University, Wellington

Otago University

Unitec

Christchurch Polytechnic & Institute of Technology

University of Tasmania (Australia)

University of Western Australia

Newcastle University (Australia)

NASA (USA)

Scott Polar Research Institute (UK)

University of London (UK)

University of Edinburgh (UK)

Surry Institute of Art and Design (UK)

Conferences attended by GCAS graduates

Postgraduate student conferences, Canterbury University
Symposium, Canterbury University
Annual Antarctic Conferences, Auckland, Christchurch, Dunedin
SOE 2001
CCAMLR 2002
Antarctic Ecosystems Conference, Canada
Geographical Society Christchurch
SOER-RSR Wellington 2002
Tourism Workshop, Lincoln University
Royal Geographical Society Workshop, UK
AAG Annual Conference 2002, 2003
New Zealand Geographical Society conference
Health professionals
Farmers
Antarctica New Zealand
Geomorphological Research Group
International Permafrost Conference, Switzerland
Antarctic Science symposium, Korea

Conferences pending

Antarctic Conference, Philadelphia (USA)
CSAA Christchurch
IHRG Auckland
Historical Geography Conference, Auckland

Appendix C

Presentations

Non-academic or professional groups spoken to include:

Friends and family
Tramping, climbing and outdoor clubs
Primary and secondary schools
English language groups
Tertiary Institutions
Women's groups
Rotary Club
Probus Club
Friendship Force
Girl Guides
General Public
Work colleagues
Antarctic Society

Appendix D

Articles

In addition to articles published by employees of Antarctica New Zealand, non-academic articles have been published in the following publications:

- NZ Listener
- The Press
- Miscellaneous local papers
- Christchurch Star
- Heritage New Zealand
- New Zealand Historic Places Trust newsletter
- Palmerston North Japan Society Magazine
- Antarctic Journal
- Geographical Magazine
- Antarctic Magazine
- Antarctic Society Journal
- New Zealand Geographic
- Canterbury District Law Society Magazine
- Christchurch Council Newsletter
- Miscellaneous school magazines
- Graduate Magazine
- Freedom Air magazine
- Miscellaneous Australian newspapers

Appendix E

In addition to radio coverage of employees of Antarctica New Zealand, radio stations and Antarctic issues covered include:

- Radio Sydney, Antarctic sustainable architecture (Australia)
- NZ Talkback radio, Antarctic tourism
- Radio Interview, Antarctic tourism
- Miscellaneous local radio stations

Appendix F

Artistic exhibitions:

Christchurch Photographic Society
Spiritual Tourism, London (UK)
Orient Lines Antarctic Cruise exhibition (UK)
Australian Antarctic Division (Australia)
Photographic Exhibition, Wellington
Special Photographers Company, London (UK)
Otago University Art Exhibition
University of Canterbury
Miscellaneous schools
Hamilton - various localities (Paintings)
Christchurch - various localities (Paintings)
Palmerston North Library
Galleries in Perth (Australia)

Appendix G

Quotes

“Interview panels asked directly about my Antarctic experience. ...it has been beneficial for working in extreme remote environments, working with small isolated groups in the field, leadership and team building skills, conflict resolution, etc.

“The course component of access to the Antarctic environment cannot be underestimated in its value for direct empathy, education and understanding of this environment. Antarctic professionals will always recognise and take someone more seriously if they have Antarctic experience”. *Antarctic Artist*

“At any interview [GCAS] is always a discussion point with the interviewer... because the course itself is so diverse it caters to many work situations even if they are not Antarctic related. One example is the ability to conduct field work in trying conditions, which I now do in my current job”. *Environmental Scientist*

“My Job includes the development of a visitor impact monitoring system for Stewart Island and for the Sub-Antarctic Islands and the monitoring of visitor assets there. This is my first full time job and I do not doubt the importance of the GCAS course in not only qualifying me for this job but also for providing me with a range of interdisciplinary skills relevant to this job.

“The course gave me a broad range of skills relevant to my career, including team skills, critical and lateral thinking skills and an appreciation of the broad range of issues pertinent to unique environments”. *DoC Employee*

“I currently work in an environmental management role in NZ. My experience in GCAS has given me the skills to approach my work in a much more holistic or 'big picture' way, incorporating the policy, legal, historical and community aspects of

working with environmental matters, not just the scientific view. This has been noticed and appreciated by colleagues and clients”. *Environmental Scientist*

“Thanks to GCAS I now think bigger, or think about things that I never really thought about before”. *Biological Scientist*

“Potential employers always ask about [GCAS], and I can explain how it not only taught me a lot about a place that I am very interested in personally, but that it also taught me a lot about other disciplines, particularly international politics, international law, biology, geology, history, psychology, art. In this sense Antarctica was the case study to learn about a lot of other disciplines in an interesting way.

“I think it was a great course, I thoroughly enjoyed it, and I will take the things I learnt on that course and the memories with me throughout my life”. *Environmental Scientist*

“The multi-disciplinary nature of the course provided a real background of information, and made me appreciate further the multi-faceted nature of any issue”. *MoF Employee*

“Huge benefit in teaching geography.... Excellent links, contacts, resources”. *Secondary School Teacher*

“My current employer definitely saw it as an advantage – he has often asked me about it, and mentioned after my interview that it was a fantastic thing to have on a CV. He saw the experience and the commitment of the course as being great for personal development in goal setting, determination, motivation and direction (not to mention just the experience).

“The qualification has helped me in my profession. It has made me a lot more open minded about all sorts of issues related to professions, cultures, organisations and in particular the environmental. I find I am a lot more careful / sensitive when designing things to consider the impact from all sides – not just from the financial or business sense which I think is often overlooked in engineering companies”. *Engineer*