

Status Report

International Antarctic Institute



*Fostering the next generation of polar researchers
through international collaboration*

December 2009



International Antarctic Institute

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Executive summary

The International Antarctic Institute (IAI) is a global consortium of universities and agencies that provide university-level education and conduct research in Antarctic studies.

Building on the spirit of international cooperation in Antarctic research fostered by the Antarctic Treaty System, the Institute brings together diverse institutions throughout the world to share their knowledge and expertise.

The IAI promotes present and future international collaboration by providing students from many countries access to rich and diverse cultural experiences while ensuring they receive the highest quality education in Antarctic and Southern Ocean studies.

IAI Activities

The IAI facilitates student and faculty exchange programs and allows students to earn credits toward their university degree by taking courses or participating in field studies through any of the member universities.

This provides member institutions access to an unparalleled range of Antarctic education and research programs. Students enrolled in an IAI-affiliated university can take a proportion of their course units at other IAI member institutions.

Teaching and research staff at the IAI member organisations also share their expertise and work together to develop a broad range of innovative classroom and field-based education programs.

Since its establishment in 2006, the IAI has developed and implemented programs and activities in three key areas: courses and units of study, Masters degree programs, and field opportunities for students. IAI partner universities have also held a limited number of student and staff exchanges between universities, and there are plans to expand this part of the program in the future.

Organisation and Management

The IAI is governed by a Council comprising one representative of each of the member institutions. The Council promotes academic collaboration at faculty levels, coordinates all IAI activities within the member institutions, works collaboratively to develop future programs and activities, and promotes the institution.

A two-person Secretariat, currently housed at the University of Tasmania (UTAS) is responsible for the day-to-day operation of the Institute, including publicity and promotion and the identification of funding opportunities.

An Advisory Group is currently being established to provide support and advice as needed to the Secretariat.

An Academic Coordinating Committee receives and processes applications from Members for the development and delivery of IAI courses and units, and makes recommendations to the Council for IAI consideration for approval.

Future Development

Over the following two years, the IAI plans to strengthen the capacity of the Secretariat to enable it to be more effective in working with the partner institutions, developing programs, marketing, and fund-raising for student and staff exchanges.

Opportunities for students will be increased through the development of new Masters degree programs, more IAI-approved courses at partner institutes, an increased number of field courses and exchange options for students and staff, and the addition of a multidisciplinary on-line module, *Introduction to Antarctic Science*, that can be used by all of the partner institutions.

Marketing and Promotion

The IAI has identified its target market as students who are looking for the best quality Antarctic education or for exceptional opportunities to study and work internationally. This includes current or future students at any of the partner universities who would like to broaden their international experience in the field of polar research, or access a wider range of interdisciplinary and multidisciplinary expertise.

In addition to the partner universities, the IAI will continue to be promoted in developing countries that do not have their own Antarctic research/education programs, or those that could benefit from membership to broaden their access to facilities and resources.

The IAI is in the process of developing a multi-pronged approach to raise awareness of the opportunities and benefits available to students. This will involve working through both the Secretariat and directly through the partner institutions, as well as through other key polar research and education organisations, using a variety of media including web and print-based materials, presentations, special events and public media.



Photo: M. Arevalo

Overview

The International Antarctic Institute (IAI) is a worldwide consortium of universities and agencies that provide university-level education in Antarctic studies, and that also engage in polar research. It currently involves 20 diverse institutions in 13 countries – Australia, Brazil, Chile, France, Germany, Italy, Japan, Malaysia, New Zealand, Norway, Spain, the United Kingdom and the United States of America. A list of current members is shown on the back inside cover of this report.

The main goal of the IAI is to facilitate student and faculty exchange programs and allow students to earn credits toward their university degrees by taking courses or participating in field studies through any of the member universities. This provides member institutions access to an unparalleled range of Antarctic education and research programs and resources.

Mission Statement

The IAI mission is to promote international cooperation engendered by the Antarctic Treaty System by providing exceptional educational and cultural experiences for our students. This can only be accomplished by international sharing of resources, knowledge and expertise.

More than 60% of the Earth's fresh water is locked up in the massive ice sheets of Antarctica. Oceanographic and atmospheric processes in the Southern Ocean around Antarctica play an essential role in the regulation of global climate. The Southern Ocean also hosts a vast and complex marine ecosystem that supports an international fishery. The continent itself is a place of superlatives – the highest, coldest, windiest place on Earth.

Almost 50 years ago, the signing of the Antarctic Treaty recognized the value of this unique region. The treaty set Antarctica aside as a place for peace and international scientific collaboration. The succeeding decades have shown that this cooperation and sharing of knowledge are essential for the continued protection of this invaluable resource.

Historical Background

The IAI was initiated as a result of a Governor's Forum on Antarctic Affairs in 2003. Both the Tasmanian Governor at the time, Sir Guy Green, the Vice Chancellor of the University of Tasmania, Professor Daryl Le Grew, and the Director of IASOS, Professor Andrew McMinn saw an opportunity and envisioned the establishment of an International Antarctic University.

Invitations to attend a workshop to discuss the development of such an educational structure were extended to universities and relevant institutions throughout the world that were directly concerned with Antarctic undergraduate and postgraduate education. The workshop was held in Hobart, Tasmania in November 2004 and the concept received unanimous support from the 30 participants from 19 institutions representing 12 countries. Participants recognised a range of practical issues related to establishing and implementing such an Institute, including its funding and infrastructure needs and support.

During the meeting, the following resolutions were discussed and passed unanimously:

1. An international Antarctic institute ('the Institute') should be established.
2. The Institute:
 - a. Shall comprise a consortium of participating institutions
 - b. Shall be governed by a council comprising a person appointed by each Participating Institution.

-
3. It is envisaged that the Institute will be multi-campus and multi-disciplinary and will:
 - a. Develop undergraduate and/or postgraduate courses and associated activities and provide joint supervision of student projects;
 - b. Be a vehicle to draw upon the strengths of each Participating Institution;
 - c. Facilitate student and faculty exchange.
 4. The offer by the University of Tasmania to establish and resource an interim Secretariat to provide administrative support for the establishment of the Institute is accepted.
 5. The offer by the University of Tasmania to establish and resource a Secretariat for the operation of the Institute for an initial period following its establishment is accepted.
 6. As soon as practicable, each participating Institution shall provide the interim Secretariat with the name and contact details of a representative.
 7. Following consultation with the Participating Institutions, the interim Secretariat shall generate detailed proposals and business plans for the structure and operation of the Institute for consideration and ratification by the appropriate institutional bodies.
 8. The interim Secretariat shall be authorised to inform the International Polar Year (IPY) Committee of the proposal to establish an international Antarctic institute and to register a Statement of Intent in anticipation of the establishment of the Institute.

Pursuant to the resolutions passed by the 2004 workshop, the Institute was created at a meeting held in Hobart on 8 July 2006. At the same meeting, a Memorandum of Understanding (Appendix I) for Member institutions was endorsed. At a meeting in St Petersburg, Russia on 6 July 2008, the Council adopted the Constitution (Appendix II).

A UNESCO-Cousteau chair in Antarctic and Southern Ocean Environmental Sciences has also been established in association with the IAI and was launched on 22 June 2007.

Goals and Objectives

The goals of the IAI are to:

- Develop and provide students with international opportunities in Antarctic education that will enable them to become expertly trained scientists and social scientists with international experience and skills in research and its application.
- Deliver the knowledge and information needed by the next generation of researchers and policy makers to address sustainable resource management, climate impacts and other global environmental and social issues associated with Antarctica and the Southern Ocean.
- Facilitate the engagement of the international scientific community in Antarctic and Southern Ocean education.
- Extend the members' existing national teaching expertise in Antarctic education into the international arena.

Key objectives include:

- Develop effective ways to share teaching resources between partner universities.
- Develop new and innovative Antarctic courses.
- Develop clear articulation of pathways between degrees to encourage student and staff mobility.

Organisation and Management

The IAI is governed by a Council comprising one representative of each of the member institutions. Council representatives promote academic collaboration at faculty levels for research and study; act as principal contacts and coordinate all IAI activities within their institutions; distribute information about their faculties, facilities, research, publications, library materials and educational resources of the other institutions; and periodically review and evaluate past activities and explore new ideas for future agreements. A list of current Council representatives is included in Appendix III.

Steering Group

A Steering Group was responsible for the establishment of the IAI. Members were:

Sir Guy Green, Chair
Professor Andrew McMinn, Project Director, IASOS, University of Tasmania
Professor Daryl Le Grew, Vice Chancellor, University of Tasmania
Professor Michael Stoddart, Australian Antarctic Division
Mr Ben Galbraith, Antarctic Tasmania
Assoc Professor Marcus Haward, School of Government, University of Tasmania
Dr Patti Virtue, IAI Project Officer, IASOS, University of Tasmania

Secretariat

The Secretariat is responsible for the day-to-day operation of the institute, including publicity and promotion and the identification of funding opportunities. It was initially established by the University of Tasmania. Professor Andrew McMinn was appointed as Director until 8 July 2009 and, subject to review, for a further period of two years thereafter. Beyond that time, it is envisaged that the Secretariat will rotate between member institutions.

Current members of the Secretariat are:

Professor Andrew McMinn, Director
Dr Patti Virtue, Project Coordinator

A Secretariat Advisory Group is currently being formed to provide advice and support as needed.

Academic Coordinating Committee

The Academic Coordinating Committee (ACC) of the Council is comprised of members appointed by the Council for a term of two years. Committee functions include receiving and processing applications from Members for the delivery and approval of Institute courses and units, and making recommendations to the Council for approval of courses and units.

Current members of the ACC are:

Dr Eva Bucciarelli / Paul Treguer, Université de Bretagne Occidentale and Institut Universitaire Européen de la Mer (IUEM), France
Dr Carlos Rios Cardoza, Universidad de Magallanes, Chile
Professor Eugene Domack, Hamilton College, USA
Professor Dr Wilhelm Hagen, Universität Bremen, Germany
Professor Takeo Hondoh / Dr Shigeru Aoki, Hokkaido University, Institute of Low Temperature Science, Japan
Professor Dr Azizan Abu Samah, Universiti Sains Malaysia, Malaysia
Professor Bryan Storey, University of Canterbury, Gateway Antarctica, New Zealand
Professor Else Hegseth, University of Tromsø, Norway

IAI Activities

Antarctic research and education are extremely difficult and expensive. The remoteness of the region and the harsh environment limit the ability of most individual universities or agencies to provide access for students. At the same time, we now recognise that understanding the polar regions is critical for understanding and predicting global climate change and its possible impacts. An international collaborative approach maximises the financial efficiency while providing the broadest, best quality educational opportunities for the students who will become the future researchers, policymakers and caretakers of this invaluable resource.

The IAI facilitates cooperation and collaboration between members in Antarctic multidisciplinary education by developing and offering multidisciplinary and multi-institute courses and units of study. Each of these courses and units has a certain number of places allocated for IAI students from other partner universities without additional tuition fees.

The services of the IAI will be especially important over the next decade as results from research done during the International Polar Year (IPY) become available, and new and crucial research priorities are identified. These priorities will all certainly be international and multidisciplinary in nature.

Since its establishment in 2006, the IAI has developed and implemented programs and activities in three key areas: courses and units of study, Masters degree programs, and field opportunities for students. IAI partner universities have also held a limited number of student and staff exchanges between universities, and there are plans to expand this part of the program in the future.

Units of Study and Certificate Programs

Six of the IAI partner universities offer units of study, courses, certificate and/or degree programs that are open to students from any IAI institution. A complete list of currently approved courses is shown in Appendix IV.



Masters Degree Courses

During the last two years, several Masters of Antarctic Science programs have been developed and approved, with a focus on Marine Biology and Marine Chemistry (Institut Universitaire Européen de la Mer / Université de Bretagne Occidentale, France), Polar Marine Biology (University of Tasmania, Australia) and Glaciology (Universidad de Magallanes, Chile). The University of Canterbury also offers an interdisciplinary Masters of Antarctic Studies degree program.

Field Opportunities for Students

A limited number of field opportunities have already been made available to IAI students. These include a ten-day sea ice short course in the Okhotsk Sea (run by Hokkaido University) that was attended by 15 postgraduate students from Japan, Australia, Malaysia and Indonesia, and a Gondwana Geology and Tasmanian Field Studies course (run by Hamilton College).

In addition, five students have been able to undertake research travel to Antarctica because of free berths provided by two different research vessels (the Tokyo University of Marine Science and Technology vessel *Umitaka Maru* and the French resupply ship *L'Astrolabe*), as well as an Antarctic tourism company, Aurora Expeditions.

Student Exchanges

Student exchanges are in their beginning phase. Funding was received for up to six student exchanges between UTAS and the Universidad de Magallanes from the Council on Australia Latin America Relations (COALAR). In the past year, two UTAS students travelled to the University of Magallanes for a semester of research, and two University of Magallanes students worked on marine science research projects at UTAS. Two more students from the Universidad de Magallanes will be attending UTAS during the 2009-10 scholastic year. In addition, one UTAS student is presently at the University of Tromsø in Svalbard participating in a benthic marine course.



In 2010, Masters students from the Université de Brest and the Institut Universitaire Européen de la Mer will conduct six-month research projects at other IAI universities. Hamilton College has US National Science Foundation funding to offer IAI students an opportunity to participate in an exciting marine geology course on the dramatic break-up of the Larsen B Ice Shelf.



Staff Exchanges

Staff exchanges are another way the IAI is promoting the goal of sharing expertise among partner institutions. In 2008, UTAS Professor Andrew McMinn travelled to Japan to help teach the University of Hokkaido sea ice course. He also visited partners at the Universitat de Barcelona and the University of Siena to discuss new member participation in the IAI.

UTAS Vice Chancellor Professor Daryl Le Grew also visited the Universitat de Barcelona, the University of Siena, the Universität Bremen, the University of Hokkaido, the Universidad de Magallanes and Hamilton College to meet Presidents and Rectors to discuss, and in some cases sign, Memoranda of Understanding. Professor Le Grew also visited the Cousteau Society to develop the joint UNESCO/Cousteau Chair under the IAI.

IAI Project Coordinator Dr Patti Virtue visited the Universidad de Magallanes, the Université de Bretagne Occidentale and Institut Universitaire Européen de la Mer, the University of Hokkaido and the Universität Bremen to make presentations to respective boards and discuss student courses and exchanges. Dr Virtue also visited IAI associate members the Alfred-Wegener-Institute (AWI) and the French Polar Institute (IPEV).

Professor Eugene Domack from Hamilton College met with Dr Carlos Rios and colleagues in June 2008 to explore the potential for collaboration on a short course at the Universidad de Magallanes after the LARISSA cruise in early March 2010, as well as a possible undergraduate student field camp on ice at BO'Higgins.

Future Development

Over the following two years, the IAI will develop and implement the following initiatives:

- Strengthen the capacity of the Secretariat to enable it to be more effective in working with the partner institutions, marketing and fund-raising.
- Develop two new Masters degree programs – one with a focus on Polar Geosciences and the other focused on the social sciences.
- Increase the number and diversity of courses offered to students.
- Increase the number of field opportunities for students. Currently only one course and a small number of ship-board opportunities exist. This needs to expand to accommodate at least fifty students per year.
- Develop and promote a multidisciplinary on-line module, *Introduction to Antarctic Science*, that can be used by all of the partner institutions.
- Increase the number of students who take courses, units, field studies or research at more than one partner university. Currently the number is approximately twenty; this needs to be increased to fifty.
- Determine and approve courses acceptable for joint IAI-badged degrees.

Development Strategy – the Next Steps

Strengthening the Capacity of the Secretariat

To serve as an effective operational arm of the IAI and to maintain the growth and development of the Institute, the Secretariat needs to expand and strengthen its capacity. The current two-person Secretariat, both of whom have additional unrelated duties, is not sufficient to maintain the current activities of the IAI, and is definitely inadequate for future expansion.

The IAI Secretariat and Advisory Group are currently consulting stakeholders and considering a range of operational and administrative models to increase the commitment of the partners to the Institute, and widen the range of funding options.

An analysis of a similar organisation, the University of the Arctic (UArctic), indicates that geographically-dispersed administration and operational functions help increase the commitment of the partners to the institute, and widen the range of funding options.

The IAI Secretariat will establish a task force composed of representatives from key partner institutions to explore options such as establishing ‘branch’ offices in different countries, where each office supports a different aspect of the IAI – e.g., marketing, field studies, etc. In a similar fashion to the UArctic model, these offices could be supported by a combination of in-kind contributions from the partner institutions and external funding from respective government and private sources.

Additional Course Opportunities for IAI Students

During the 2009-10 academic year, the Universitat de Barcelona will offer a new course entitled *The Antarctic Land-Ocean System*. This course consists of 25 hours of lectures plus 50 hours of personal work. It is offered within the official Doctorate or Masters Program in Marine Sciences: Oceanography and Management of the Marine Environment.

In addition, a one semester unit on the ecology and biogeochemistry of the Southern Ocean was established in 2009 at the Institut Universitaire Européen de la Mer for first-year Masters students in Marine Biology and Marine Chemistry. This course will be offered in the coming scholastic year.

New IAI Masters Degrees

Geosciences

Most of the courses currently available in the IAI focus on the Antarctic ecosystem. A geosciences working group with representatives from Hamilton College (USA), the University of Canterbury (New Zealand), Universitat de Barcelona (Spain), Ohio State University (USA), and the University of Tasmania (Australia) has been formed to explore development of a geoscience program. The group had an initial teleconference meeting in November 2008 to discuss the underpinning concepts and the scope of the program.

Over the coming months, the group will hold regular telephone or web conferences to determine the optimal module length, the number of modules needed, the general content of each of the modules, and the possible modes of delivery. Once this is decided and agreed upon by the working group, each group member will choose one or more modules to develop. When the core modules have been developed, they will be submitted to the Academic Coordinating Council for approval.

Social Sciences

The Universidad de Magallanes is in the process of developing a new Masters degree in Social Sciences, in agreement with the IAI's objectives. This degree program will focus on Antarctic law and policy, and will be initiated in the 2010-11 scholastic year.



Increased Student Field Opportunities

During the past year, the IAI commissioned a feasibility study to investigate possible field study options for students. The options considered included incorporating structured student programs on research vessels (e.g., *Aurora Australis*, *L'Astrolabe*) during their routine scheduled voyages, chartering a ship specifically for a field course, and seeking partnership with Antarctic tourist operators. The possibility of subantarctic island and continental Antarctic field camps was also considered.

The Secretariat will evaluate the success of the past year's experiences with students on *L'Astrolabe* and with Aurora Expeditions, from the perspectives of both the students involved and the providers. This evaluation will provide the basis for discussion with the providers about continuation and/or expansion of their involvement. If the evaluation and discussions are favourable, we will also identify and initiate discussions with other potential tourist and research vessel operators about future collaborations.

In addition, discussions will be held with coordinators of existing programs such as the Students on Ice university courses and the Association of Polar Early Career Scientists (APECS) field schools (e.g., Svalbard and Bellingshausen) to determine effective means of IAI collaboration.

Multidisciplinary On-line Modules

The University of Tasmania already has two 100-level introductory courses in Antarctic Studies (KSA101 and KSA102), as well as a 400-level course in the Antarctic Environment (KSA412) that are offered as on-line distance courses. The IAI Secretariat will work with IAI partner institutions to adapt these courses (if and where needed) so that they can be offered as a distance option through all of the partner universities. After the courses are approved by the Academic Coordinating Council, they will be promoted via the IAI and partner websites, as well as through other marketing venues.

In addition, the IAI Secretariat will explore other distance options that may already exist at partner institutions to determine how they might fit into the overall IAI program. When the options are identified and agreed upon by the partners involved, they will be added to the overall list of IAI courses and programs.

Increased Student Exchanges

From January 2010 to June 2010, five second-year Masters students from the Université de Brest and the Institut Universitaire Européen de la Mer will conduct six-month research projects at other IAI universities.

The exchanges will be documented and evaluated to provide the basis for similar proposals to other potential funding bodies. Members of the IAI Secretariat will work together with the appropriate partner institutions to prepare and submit grant proposals during the next two years.



Development Timeline

The following table summarises the principal action steps to be undertaken during the next two years to meet the goals of the development strategy:

Initiative	Action steps
Strengthen capacity of the Secretariat	Explore opportunities to co-manage and co-fund the Secretariat with other members and associate members.
Polar geosciences and social sciences Masters degrees	Structure milestones for development of MSc programs.
Increased student field opportunities	Continue to negotiate with national Antarctic programs, partner universities and tourist operators for student field opportunities.
Multidisciplinary on-line modules	Trial the existing UTAS module at partner institutes.
	Revise the module based on feedback from participants.
Increased student and staff exchanges	Develop a proposal for the next round of Erasmus Mundus program funding.
	Investigate other sources of international student scholarships or travel funding.
	Identify funding for staff teaching exchanges.



Marketing Strategy

Research has indicated that students are motivated by a variety of factors when choosing a university. These factors vary from region to region, but include the perceived status of the institution and quality of the program, and the availability of a wide range of choice in the subjects available, in delivery modes, in assessment, and in the amount time spent on campus (Drews & Michael, 2006; James & Beckett, 2009). The IAI is composed of institutions that have high quality international reputations in Antarctic studies and research, and it is ideally structured to provide students with a broad range of choice.

The same research has also shown that students tend to base their decisions on limited, subjective information and are heavily influenced by word-of-mouth. They get information about possible universities and programs through sources such as the internet, other students and friends, open days at the university, and high school guidance counsellors. Students seeking postgraduate courses are also influenced by recommendations from their undergraduate professors and lecturers.

With this research in mind, the IAI has identified its target market and market strategies as follows:

Target Market

- Potential students who are looking for the best quality Antarctic education or for exceptional opportunities to study and work internationally.
- Students currently attending any of the partner universities who would like to broaden their international experience in the field of polar research.
- Students currently attending any of the partner universities who would like access to a wider range of interdisciplinary and multidisciplinary expertise.
- In addition to the partner universities, the IAI will be marketed in developing countries that do not have their own Antarctic research/education programs, or those that could benefit from membership to broaden their access to expensive facilities and resources (both physical and human).

Target Market Strategy

A variety of approaches to marketing are needed for the different segments of the target market. In addition to the promotional and advertising strategies listed below, the IAI will:

- work in partnership with the University of the Arctic to identify and develop shared marketing opportunities among their various networks. This may include joint publications, symposia and cross-linking of web resources.
- work with the executive committee of the Association of Polar Early Career Scientists (APECS) to identify needs and wants of prospective students, and use their networks to help target potential students. APECS currently has about 1800 members around the globe, many of whom are postgraduate students. APECS also has an active education and outreach group who do presentations at schools, enabling them to reach high school students who are making choices about their future undergraduate studies.

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- work within each of the partner institutions to advertise the IAI and its opportunities to their current and future students. At many of the partner universities, most students are currently unaware of the existence of the IAI. The appropriate means of promotion will be decided by each individual institution, but may include advertisements on the institution's website, articles in in-house publications such as newsletters, and a prominent presence at university open house events.

Advertising and Promotion Strategy

- Keep the IAI website up-to-date and help partner institutions develop their own web pages for the IAI site. Encourage partner institutions and other key organisations such as national polar research organisations and related groups to link to the IAI website in a prominent, easily found position on their websites.
- Encourage partners to hold special IAI seminars and talks within the appropriate departments of their own institutions so that students can learn about the international and multidisciplinary opportunities available through the IAI.
- Share information on a regular basis with groups such as APECS and UArctic for inclusion in their websites and vice-versa.
- Develop, print and distribute a brochure specifically for prospective students with information about how the IAI works and outlining the benefits of participation. The brochure will be distributed at appropriate forums such as career fairs, university open days, conferences and meetings. An electronic version will also be available via the website.
- Work with media offices of the partner institutions to identify and pursue opportunities for press releases and other ways to get information about the IAI to the public.
- Identify key conferences and meetings (e.g., SCAR Open Science Meeting, Oslo 2010 IPY Science Conference, APECS executive meetings, AGU, EGU, science education conferences, etc.) where potential students and/or sponsors may be found. Develop exhibit materials and have a presence at these events through presentations and exhibits.
- Have an active IAI presence at open days and career fairs at partner universities.

References

Drews T and Michael C (2006). How do students choose a university? An analysis of applications to universities in Ontario, Canada. *Research in Higher Education*, Vol. 47, No. 7, DOI: 10.1007/s11162-006-9015-6.

James R and Beckett D. The changing expectations of university students and the implications for learning. Centre for the Study of Higher Education and Centre for Human Resource Development and Training, University of Melbourne. http://www.cshe.unimelb.edu.au/people/staff_pages/James/James&Beckett=Singapore.pdf (accessed 6 March 2009).

Financial Summary

The budget currently provided by the University of Tasmania finances the operation of the IAI Secretariat. The Secretariat has been operating with a budget to fund a full time Project Officer, 20% relief time for the Director, Web support and the running of the biannual Council Meeting. A similar budget is required to operate the Secretariat at the current level of activity. However, if the IAI is to reach its potential within a ten-year time frame, additional resources will be required.

Financial Assumptions

Having canvassed members at the last Council Meeting, it is apparent that at this stage they are not prepared to underwrite the Secretariat running costs. Therefore it needs to be assumed that until the IAI is fully operational and delivering significant benefit to all members, the costs must be borne by one institution, namely UTAS. This outcome is consistent with similar university consortiums where Secretariat running expenses are donated as an in-kind contribution (e.g., University of the Arctic, Universitas 21).

Development of the IAI will continue to be slow without significant inducements to staff and students at each member institution.

Financial Forecasts

There has been a steady increase in both the number of new courses and units available and enrolments at member institutions. Alternative sources of revenue for scholarships and staff travel are being sought, and members are being encouraged to investigate national funding opportunities. There is a need to look at future funding for the Secretariat.

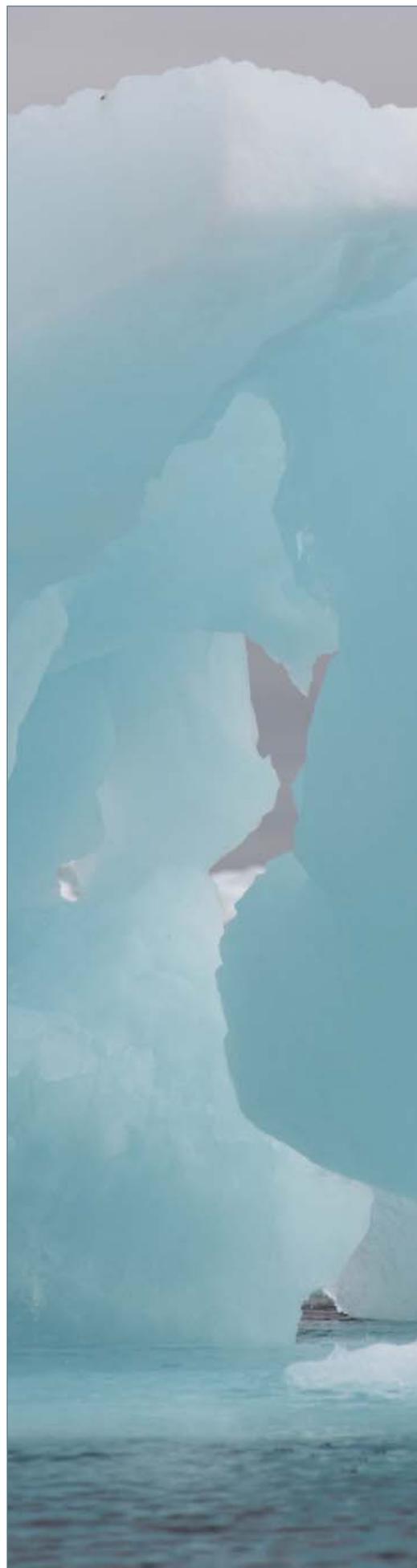
Financial Risks

The success of the IAI is dependant on the enthusiasm and support of member institutions, the interest of students in Polar studies, and affordable travel and study costs. Growth of the IAI is dependant on finding additional sources of revenue to fund student and staff travel scholarships. There is a risk that if developments are too slow, members may lose interest and leave the consortium. If no new financial resources become available, some members will not be able to afford to participate further.

Exit Strategies

At the next Council meeting in 2011, the IAI will have been in operation for five years. A Council resolution will be needed to address future IAI directions. UTAS must advise the Council of its intention to continue hosting the Secretariat at that time.

Appendices



Appendix I – Sample Memorandum of Understanding

Memorandum of Understanding between the International Antarctic Institute and Member Institutions

This agreement, between the International Antarctic Institute (IAI) and members of the institute to foster international cooperation in Antarctic education and research.

See inside cover.

I.

The agreements between the International Antarctic Institute and IAI Members may include but are not be limited to the areas:

- Development and approval of courses (see Annexe 1)
- Exchange of students and faculty members
- Joint research activities
- Professional development

II.

This Memorandum of Understanding will be identified as the parent document of any future agreement executed between the IAI and parties. It shall be for a period of five years and effective from the date of signing. Further agreements concerning any program will provide details concerning the specific commitments made by each party and will not become effective until they have been reduced to writing and executed by the duly authorised representatives of both parties. The scope of the activities under this agreement and any under any specific agreements executed between the parties shall be determined by the funds available to both IAI and the Member for the types of collaboration undertaken. Except as may be stipulated in any specific agreement, each Member shall be responsible for expenses incurred by its employees under this agreement and any other agreements executed between the parties.

III.

The International Antarctic Institute and the IAI Members agree to designate representatives to oversee and facilitate implementation of this agreement.

The Members agree to ensure that their representative will:

- promote academic collaboration at faculty levels for research and study;
- act as principal contact and coordinate all activities within their institutions;
- distribute to each institution information about the faculty, facilities, research, publications, library materials and educational resources of the other institution; and
- periodically review and evaluate past activities and explore new ideas for future agreements.

IV.

IAI or a Member may terminate this MOU by giving six (6) months advance written notice of its intention to terminate. Termination shall be without penalty. If this agreement is terminated, the IAI and the Member shall not be liable to reimburse each other for any monetary or other losses that may result.

The intention of the parties is that the terms of the agreement are not enforceable in a court of law. Further, nothing in this agreement binds the parties.

Nothing in this agreement constitutes the parties as partners, agents or employees of the other and they expressly deny the existence of such a relationship.

Annexe 1

- 1.1 The IAI Members will recognise for credit the courses and units approved by IAI Council ^{1,2,3}.
- 1.2 The IAI Members will allow students from other IAI Member Institutions to participate in IAI approved courses without the levying of tuition fees ^{4,5}.
- 1.3 Exchange students will fulfil entry requirements at the host university.

Notes:

1. All courses and units approved by IAI will already have been formally approved by one of the IAI Members and available to their own students. Once approved by IAI they will then become available to students from the other IAI Member Institutions.
2. Approval by the IAI Council of particular courses and units shall not, of itself, commit any Member to offer such courses and units.
3. The value of the credit shall be determined by the IAI Member Institutions where the students are enrolled in an IAI approved course.
4. IAI Members clearly have the right to determine the number of participants in any unit or course. They also have the right to determine the number of non tuition fee paying IAI students enrolled. However, if a unit or course is to be designated as an IAI unit or course and approved as an IAI unit or course, then it must have at least some places available for IAI students.

FOR INTERNATIONAL ANTARCTIC INSTITUTE

Signature _____

Professor Andrew McMinn
Director

Date _____

FOR UNIVERSITY OF TASMANIA

Signature _____

Professor Daryl Le Grew
Vice-Chancellor

Date _____

FOR (Applying Institution)

Signature _____

Professor

Date _____

Appendix II – IAI Constitution

CONSTITUTION
of the
INTERNATIONAL ANTARCTIC INSTITUTE



1. Defined terms and interpretation

1.1 In this Constitution unless the contrary intention appears:

Associate Member means an associate member of the Institute as defined by clause 5.1

Chair means the chair of the Institute as instituted under clause 4.2

Constitution means the constitution of the Institute as amended from time to time

Council means the Council of the Institute as defined in clause 4.1

Member means a member of the Institute as defined in clause 5.1

Institute means the International Antarctic Institute continued under this Constitution

2. Continuation of Institute

2.1 The International Antarctic Institute established by the resolutions of a meeting on 8 July 2006 in Hobart is continued.

3. Objects of Institute

3.1 The Institute is established to:

- (a) facilitate cooperation and collaboration between members in Antarctic multi-disciplinary education;
- (b) develop multi-disciplinary and multi institute degrees conferred by Members in Antarctic education.

4. Governance

4.1 The Institute is governed by a Council comprising one representative of each of the Members.

4.2 The Council may appoint a Chair for such term as it determines.

4.3 The Institute is administered by a secretariat and a Director selected, located and resourced as determined from time to time by the Council.

5. Membership

Members

5.1 The Members of the Institute are the institutions in Schedule A together with additional institutions admitted pursuant to clause 5.2.

5.2 The Council may admit as additional members of the Institute degree conferring institutions who have significant Antarctic education and research programs.

Associate Members

5.3 The Institutions set out at Schedule B are Associate Members of the Institute.

5.4 The Council may admit as additional Associate Members organisations that have a substantial interest in or are able to make a substantial contribution to the Institute.

Ceasing to be a member

5.5 Members or Associate Members may give notice of their intention to withdraw their membership of the Institute in writing to the Secretariat. The resignation will take effect from the date the withdrawal is accepted by the Council.

6. Committees

Academic Coordinating Committee

7.1 There shall be an Academic Coordinating Committee (ACC) of the Council, comprising members appointed by the Council for a term of two years.

7.2 The functions of the ACC include receiving and processing applications from Members for the delivery and approval of Institute courses and units and making recommendations to the Council for approval of courses and units.

7. Meetings

- 7.1 The secretariat may call a meeting of the Council at any time.
- 7.2 Upon the request of one-third of the members of the Council the secretariat must call a meeting of the Council.

8. Ordinance making power

- 8.1 The Council may make ordinances to facilitate and regulate the work of the Institute including, but not limited to:
- (a) rules governing the conduct of meetings;
 - (b) procedures for amendment of the Constitution;
 - (c) procedures for the admission of new members;
 - (d) procedures for approval of courses;
 - (e) rules for levying contributions from members for the funding of the Institute.

9. Trustees

- 9.1 The Council may appoint trustees to hold and deal with the funds of the Institute.
- 9.2 The instrument of appointment of trustees shall be executed by the Chair and the Director on behalf of the Institute.
- 9.3 The trustees are governed by the law of the place in which the secretariat is located.
- 9.4 A trustee shall be resident or registered as a body corporate in the place in which the secretariat is located.

10. Amendment of Constitution

- 10.1 This Constitution may be amended by the Council in accordance with the procedure set out in an ordinance made under clause 8.

Appendix III – IAI Council Representatives

IAI Council Representatives for 2008-09 are:

Dr Shigeru Aoki, Institute of Low Temperature Science, Hokkaido University, JAPAN

Dr Miquel Canals, Facultat de Geologia, Universitat de Barcelona, SPAIN

Dr Eva Bucciarelli, Institut Universitaire Européen de la Mer, Université de Bretagne Occidentale, FRANCE

Dr Carlos Rios Cardoza, Universidad de Magallanes, CHILE

Professor Eugene W. Domack, Department of Geosciences, Hamilton College, USA

Professor Julian Dowdeswell, Scott Polar Institute, University of Cambridge, UK

Dr Mitsuo Fukuchi, Graduate University for Advanced Studies, Department of Polar Science, Japanese National Institute of Polar Research, JAPAN

Professor Dr Wilhelm Hagen, Marine Zoology, University of Bremen, GERMANY

Professor Takashi Ishimaru, Tokyo University of Marine Science and Technology, JAPAN

Dr Philippe Koubbi, Observatoire Océanologique de Villefranche-sur-Mer, FRANCE

Professor W. Berry Lyons, Byrd Polar Research Center, Ohio State University, USA

Professor Andrew McMinn, Institute of Antarctic and Southern Ocean Studies, University of Tasmania, AUSTRALIA

Dr Claudia Sprengel / Dr Claudia Hanfland, Alfred Wegner Institute, GERMANY

Dr Carlo Alberto Ricci, Fac. di Scienze Matematiche Fisiche e Naturali, University of Siena, ITALY

Professor Dr Azizan Abu Samah, University of Malaya, MALAYSIA

Professor Bryan C. Storey, Gateway Antarctica, University of Canterbury, NEW ZEALAND

Dr Khairun BT. Yahya, Universiti Sains Malaysia, MALAYSIA

Appendix IV – Available Courses and Units 2008-09

Institute of Antarctic and Southern Ocean Studies, University of Tasmania

Masters of Antarctic Science

The Masters of Antarctic Science is a specialised Masters degree course in polar marine biology. It provides students with advanced instruction and training in emerging approaches and technologies in marine biology. The course is designed to produce expertly trained scientists with international experience and skills in research and its application to areas of Antarctic marine science. MAntSc students will develop an understanding of the role the Southern Ocean and Antarctic marine ecosystem plays in the global climate system. Within this MAntSc students are able to cross-credit study programs and may choose to take electives available at one of our 20 IAI partner universities and/or undertake their research project associated with expertise available through the IAI consortium.

Hamilton College

Antarctica and Global Change: A Marine Geologic Perspective

Review of the geology, meteorology, oceanography, marine biology and glaciology of the Antarctic and Southern Ocean and their influence on global environmental processes and change. Emphasis on remote sensing and marine geology methods. Offered as part of Hamilton College's participation in the International Antarctic Institute. One-half course credit.

Field Studies in Antarctica

A marine geologic survey along the Antarctic Peninsula that involves a research-oriented learning environment with oceanographic and bottom sediment sampling. Limited enrolment and consent of instructor. Limited to those participating in NSF-funded research expedition to Antarctica.

Gondwana Geology and Tasmanian Field Studies

A two-week field excursion to the island state of Australia with a focus on the geology, botany and natural history of the ancient continent of Gondwana and Tasmania. Field work will emphasise geology of the southern continents, economic resources and wilderness conservation. Extra cost. One half-credit. Prerequisite, principles of geosciences. Offered as part of Hamilton College's participation in the International Antarctic Institute.

Marine Geology of the Larsen Ice Shelf, Break-Up: An NSF sponsored Short Course

This is a two-week short course about the marine record of ice shelf settings and sediment core methodologies. It is a National Science Foundation-sponsored activity related to IPY and the LARISSA project (LARSen Ice Shelf System) in Antarctica. The course will use breakup of the Larsen B Iceshelf as a learning focus. The course will be integrated within the context of the marine record of the Larsen Ice Shelf system and regional to global climate change, using recently acquired marine data sets, sediment cores, and imagery.



Hokkaido University

Special Lecture on Antarctic Science I

Fifty years has passed since the first comprehensive Antarctic expeditions began. The cryosphere is changing and recent observations have revealed rapid climate changes. Based on the outcomes of the Japanese Antarctic Research Expeditions, this course aims to describe the changing Antarctica and get a comprehensive knowledge of the global climate change and its impact on ecosystems.

Special Lecture on Antarctic Science II

Antarctic and Arctic regions are very sensitive to the changes in global climate conditions. Thus, studying the polar regions sheds light on recent global scale climate changes. This lecture is offered by two leading scientists in the field of polar science invited from foreign institutes. For the second semester, Andrew McMinn from University of Tasmania teaches polar biology and Heinz Blatter from Swiss Federal Institute of Technology teaches glacier and ice sheet science. Students will learn the most recent and important research topics in this scientific field. The lecture also gives students an opportunity to take a lecture in English and to communicate with foreign scientists.

Special Course on Antarctic Science I (Glacier Field Course in Switzerland)

Glaciers and ice sheets are unique and very important components of cryospheric environment. For example Antarctica is covered by more than 2000m thick ice on average, and this ice sheet has a potential to raise the sea level by about 60m in the event of the entire ice sheet melting. Accordingly, it is crucial to study glaciers and ice sheets to understand global environment in the past and future. Although the course focus is specifically on glaciers, it is also beneficial to the students who are going to work in any field of cryospheric science. The course provides the opportunity to work on alpine glaciers in the Swiss Alps, to visit research institutions in Switzerland, and to take lectures offered by leading scientists in the field of cryosphere science.

Special Course on Antarctic Science II (Sea Ice Field Course in Saroma Lagoon/Okhotsk Sea)

The Okhotsk Sea marks the southern boundary of sea ice in the Northern Hemisphere. Through a field trip to sites where we can access landfast ice and pack ice, and a series of short lectures at a seminar house, this course aims to provide a comprehensive experience and understanding of the physical and biological aspects of sea ice.

Special Course on Antarctic Science III

Working in the field for scientific measurements is one of the most important and exciting research activities in cryosphere science. Because of the remote and harsh environment, however, it requires special skills, equipment and experiences. For example, knowledge of crevasses and avalanches and skills of rescuing in the case of accident are crucial for working on glaciers. This field course provides the opportunity to learn skills required for activities in the cryospheric environment, such as glaciers, sea ice and high mountains. The program is offered by a professional mountain guide who also has experience in scientific field research on glaciers. The course consists of weekly lectures in the school and two field trips to mountains in Sapporo.



University of Canterbury, Christchurch, New Zealand-Gateway Antarctica

Master of Antarctic Studies

The primary aim of the programme is to foster the interdisciplinary study of Antarctica and the surrounding Southern Ocean, to stimulate an interest in research in Antarctic Studies by New Zealand and international students, and to enable the student to carry out individual research.

The Masters Programme consists of two parts equivalent to two academic years for full-time students.

Part 1 Full-time students undertake two compulsory core units in Antarctic Studies (ANTA 401 and ANTA402) equivalent to 0.5 course weight in the first year.

ANTA 401 Antarctic Global Connections (Whole year) A discussion of the current and future issues surrounding Antarctica and the Southern Ocean and their global relevance.

ANTA 402 Antarctic Legal System (Semester 1) An examination of the international legal system that governs Antarctica.

As well as the above two compulsory units, students will in their first year undertake existing university units (equivalent to 0.5 course weight) within their specialist area of interest to continue to develop their own specialist skills within their proposed discipline. The Postgraduate Diploma is equivalent to Part 1 of the Masters degree.

Part 2 In the second academic year (Part 2), full-time students will complete a thesis on an Antarctic related topic. In some but not all cases this will be based on research carried out in Antarctica as a component of Part 2.

ANTA 690 Antarctic Studies Masters Thesis

This is the thesis component of the Master of Antarctic studies. It provides the opportunity for graduate students to engage in specialised research areas related to Antarctica. Approval of topics is subject to approval by the course coordinator and suitable provision for academic supervision. The thesis will be in keeping with standard university regulations. Whilst originality of contribution is not essential, its presence is appreciated.

Graduate Certificate in Antarctic Studies

The Graduate Certificate in Antarctic Studies (GCAS) is a fourteen week, in-depth study of the history, science, political discourse, environmental concerns and future challenges of the frozen continent and surrounding seas. The course is coordinated by Gateway Antarctica, the Centre for Antarctic Studies and Research at the University of Canterbury, in Christchurch, New Zealand. It was developed in 1998 jointly by the University of Canterbury and Antarctica New Zealand with significant input from government agencies and the wider national and international community. The multidisciplinary perspective along with the broad-based critique of the issues that Antarctica faces, and the ten-day Antarctic field course have resulted in a course that is unique in its focus.

The aim of GCAS is to provide a contextual programme of study for graduates and members of the professions who have an interest in Antarctica and the Southern Ocean. It provides an ideal course for members of national Antarctic programs who want to understand better the current issues and legal framework surrounding Antarctica, and experience first hand living and working in Antarctica.

Universidad de Magallanes, Chile

Diploma in Antarctic Programs

The Diploma is structured on two lines of teaching: a theoretical component and a series of applied workshops. The program completion will be by approving the course work and the thesis defence. Theoretical coursework includes a series of topics needed to understand past, present and future human activity in the Antarctic. These modules include: Antarctic History and Geography, Antarctic Tourism, the Antarctic Treaty System and Antarctic Ecology and Safety in Maritime and Aerial Operations in Antarctic.

Masters in Antarctic Sciences - Specialisation in Glaciology

This new Masters program will help students develop a strong fundamental understanding of Antarctic-related subjects; comprehensive knowledge of glaciology; understanding of the principles that guide the design and execution of high-quality research; field experience and substantial research skills. Graduates will be able to teach and to communicate Antarctic issues to the public. A working knowledge of both Spanish and English is required for this program.

Alfred Wegener Institute for Polar and Marine Research, Germany

Introductory Course in Marine Sciences Part II: Biogeochemical Oceanography and Climate

This course introduces some main fields of marine sciences – e.g., chemical oceanography, biological oceanography, marine biogeosciences as related to the marine carbon cycle, and climate research. The programme is multidisciplinary, and all disciplines will be discussed as components of an integrated system. Topics include chemical properties of seawater and ocean carbonate chemistry (alkalinity, lysocline dynamics, etc.); the marine carbon cycle and the biological pump; proxy development and application in climate research (a biogeosciences approach); and climate variability and climate change

Institut Universitaire Européen de la Mer

Ecology and Biogeochemistry of the Southern Ocean

This unit is designed for first-year Masters students in Marine Biology and Marine Chemistry. It is based on the multidisciplinary expertise in marine sciences of the European Institute of Marine Studies (IUEM) and it aims to give a comprehensive understanding of Antarctica and the Southern Ocean, with a focus on the ecology and biogeochemistry of regions around the subantarctic islands.





International Antarctic Institute Members

Hamilton College, USA
Hokkaido University, Institute of Low Temperature Science, Japan
National Institute of Polar Research (NIPR), Department of Polar Science, Japan
Ohio State University, Byrd Polar Research Center, USA
Tokyo University of Marine Science and Technology, Department of Ocean Sciences, Japan
Universidad de Magallanes, Chile
Universidade Federal do Paraná, Brazil
Università di Siena, Italy
Universität Bremen, Germany
Universitat de Barcelona, Spain
Université de Bretagne Occidentale and European Institute for Marine Studies (IUEM), France
Université Pierre et Marie Curie- Paris VI and Observatoire Océanologique, Villefranche sur mer, France
Universiti Sains Malaysia, Malaysia
University of Cambridge, Scott Polar Research Institute, UK
University of Canterbury, Gateway Antarctica, New Zealand
University of Malaya, Malaysia
University of Tasmania, Australia
University of Tromsø, Norway

Associate Members

Alfred-Wegener-Institute for Polar and Marine Research (AWI)
Australian Antarctic Division (AAD)
French Polar Institute (IPEV)
International Polar Foundation
Norwegian Polar Institute and University Center in Svalbard (UNIS)
Scientific Committee for Antarctic Research (SCAR)
The Cousteau Society

