

## ARCTIC ICEBREAKER COORDINATING MEETING

**National Science Building Room  
365/370 Wilson Blvd  
Arlington, VA  
12-13 January 2000**

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### DAY ONE

The Arctic Icebreaker Coordinating Committee (AICC) met in Room 365 of the National Science Foundation on 11-12 January 2000. Jim Swift, AICC Chair, opened the meeting at 0830 and welcomed those in attendance. Introductions were made around the room. The agenda, [Appendix I](#) was followed except as noted in the minutes below. Attendees are listed in [Appendix II](#).

**UNOLS Reports** – Bob Knox, UNOLS Chair, provided the report. Bob praised the committee as being one of the most active and focused of the UNOLS committees. He explained there will be fallout from the NSF Academic Fleet review that could affect the AICC. Changes are likely in the technical support aspects of sea going science. The UNOLS Office will be moving in May to Moss Landing Marine Laboratories with Mike Prince as the Executive Secretary. Jack Bash will stay on through the summer to support HEALY science systems testing.

**National Science Foundation (NSF)** - Tom Pyle provided the report for NSF. The next target date for OPP proposals for work in the Arctic will be 15 February. A new challenge for OPP will be working with the AICC and USCG in planning and conducting Arctic science. Tom introduced Simon Stephenson who will be filling the task of Arctic logistic coordinator. Don Heinrichs has retired and the Division of Ocean Sciences has not yet indicated who will replace him in the coordination with OPP. Don had been very active and helpful in working with OPP.

Tom explained that next year's budget is still fluid. The standard UNOLS ship time requests will be used for HEALY. Logistics support matters should go to both Simon and the respective program manager.

**United States Coast Guard (USCG)** – CDR George Dupree reported that POLAR STAR is currently on a Deep-Freeze mission. POLAR SEA is to be extended in its yard period so the Science of Opportunity (SOO) cruise may be POLAR STAR. Some funded work is currently scheduled for POLAR STAR. Capt. Garrett has been extended as HEALY's captain into 2001. The Baltimore visit has created excitement and all are looking for a good visit. Congress is still wrestling with issues related to reimbursement of science time on HEALY.

Phil McGillivary added that Glenn Cota is to be designated Chief Scientist for the SOO.

A discussion followed concerning the possibility of HEALY working in Svalbard waters. All agreed that it is extremely important that HEALY be permitted to work in this area.

**Arctic Commission** - Garry Brass reported that there is no news yet about SCICEX, a decision is still pending.

**NAVSEA** – LCDR Al Gaiser reported that HEALY is having propulsion problems and departure has

been delayed. The earliest it is scheduled to leave Avondale is Friday 14 January. Further delays are possible and if they occur it may have an impact on SeaBeam testing and the scheduled warm water test planned to start 11 Feb in San Juan. The delay is also cause for concern because of the Baltimore visit. Once the ship leaves Avondale, AI will pass on the schedule.

An Ice Trial Manual has been published in draft form. It will be available on the UNOLS web site. SeaBeam testing has already begun and is considered Phase I. Phase II is warm water testing.

AI has been working closely with Canada, Denmark and Greenland with respect to the ice breaking and cold water science tests to be conducted in Baffin Bay. On the Canadian side the Clyde River area is anxious for the ship's arrival. Denmark's embassy has been contacted and will help arrange for hotel rooms in Nuuk. They are looking forward to the visit and should be helpful. Testing in and around Home Bay is likely. The science systems testing team will make the decision as to where it will want to work for science testing. AI will make ice maps available for planning. There has been some difficulty in getting the CALCOMP plotter operating. Scripps is providing assistance. A second plotter from the University of Rhode Island has been lost in transit. The plotter will be mounted in the main lab. AI reports that the ship's science systems seem to be ready for testing. Tracks for the 30 meter coring system have been installed. Jim Broda, designer of the coring system, is planning to be available for both Phase II and IV.

Test memos for science testing will need to be updated for Phase IV. Bunks will be assigned. Mixed gender berthing is not possible. Berthing for level ice testing, Phase III, is very tight. An official schedule will be published when the ship departs Avondale.

The Coast Guard has a waiver to use a crew of eight vs. twelve for the helo detachment aboard HEALY. For flight operations there will be one pilot and one mechanic allowing room onboard for four. Three crew could be required if the helo has not flown recently or weather dictates otherwise reducing the passenger capacity to three. George Dupree will get a definitive answer to crewing requirements. Helo ops should be described in the ship's planning manual for science planning.

Science equipment should load out in Norfolk. Later inport loading is possible in Baltimore, St. Johns and Halifax though the ship's company will be very busy in Baltimore. Customs should be taken under consideration if transporting equipment to the ship in Canada or Greenland.

Lisa Clough provided a Chief Scientist's perspective of planning for Phase I/II science testing. Test memos are in place. The science testing team and the David Taylor group will join the ship in San Juan. Tim Gates, from David Taylor, will have four days of the eleven scheduled. At least one day will overlap as they look at the ship's SeaBeam. Two programs will dominate the tests. These are coring and SeaBeam. Other components include, SDN, winches, ADCP and CTD work. Prioritizing will be required. Locations for the testing are being worked on. Larry Lawver will be overseeing the multi-beam and coring tests. A rough schedule will be put out in advance. An executive report will be produced. Lisa will join the ship in Pensacola and transit to San Juan. SeaBeam testing has already started.

The Chief Scientist for Phase III, level ice testing will be Joe Coburn.

Baltimore Public Relations Visit Planning - HEALY is scheduled to depart Norfolk on 19 March and transit to Baltimore. The UNOLS FIC Committee will ride the ship and hold a meeting aboard. There is room for other riders for this transit. The ship will be open Monday and Tuesday for activities. A press day is being planned. The Shelf Basin Interaction (SBI) Group is planning to meet aboard on Tuesday. Wednesday will be the big event with VIPs onboard. The period of 1030 to 1330 will be show and tell for guests. Congressional staffers have been invited.

George will check to see if AICC members can stay aboard during the Baltimore visit. AICC members are encouraged to be available for the ship's open house. Posters should be plentiful for the lab area. We will need to arrange for display boards for posters. Foam core boards hanging from the overhead can be used to hold the posters.

Approximately eight people will be needed to support the displays. Volunteers to date are: Jim Swift, Lisa Clough, Larry Lawver, Garry Brass, Terry Whitlege, Joe Coburn, Mike Prince and Jack Bash. CDR Dupree will coordinate the VIP invitations. Teachers in the TEA program will be included coordinated by

Fae Korsmo. Jim Swift will coordinate the posters. Jack Bash will serve as general coordinator for the UNOLS community.

CORE should be asked to help publicize the visit to the greater scientific community. Monday and Tuesday will be available for general visiting.

**Teacher's Program** - Kelly Falkner provided an update on a proposal for having teachers aboard during the HEALY testing Phases III and IV. It is planned that six teachers total be scheduled, two at a time. The web site for Teachers Experiencing Antarctica and the Arctic (TEA) has advertised this. The teachers need to have exposure to what they will expect before coming aboard. They should have an understanding of the science and transmit it to the classroom. Teachers will send out daily web reports. Fae Korsmo is the NSF Program Manager for TEA. Wayne Sukow runs the teacher enhancement program at NSF. He is pleased to have the AICC interested in this program and wants the teachers to have a solid science experience. The participating teachers will be in contact with hundreds of other teachers and school children through the web. To make the program cost effective the teachers must mentor some of their peers for nominally 130 hours. An orientation period is needed. This could be done in conjunction with the Baltimore visit of HEALY. The scientists on each leg must be willing to work with the teachers and include them in the science testing programs. It is necessary to work out how the teachers will be involved while they are onboard.

**AGU Town Meeting** - Jim Swift reported on the evening town meeting at the fall AGU conference. The meeting turned out to be an information session. About 30 persons attended. Jim explained to the gathering that the AICC is still working out ways to carry out expeditionary planning. The community's questions were centered around what equipment is onboard HEALY and will it work. Another meeting has been arranged at the Ocean Science Meeting in San Antonio later this month.

**Expeditionary planning role of AICC** – The committee discussed expeditionary planning. It is important to keep the community informed as to what science is planned and what is funded. Information should be tracked such as letters of intent, proposals submitted, proposals funded and proposals scheduled. This information can be available on the UNOLS web site and must remain current. The funding cycle makes long range planning very difficult. It is particularly difficult to coordinate operations with foreign ships since they commit to a schedule several years in advance. It was agreed that the letters of intent and proposal status must be maintained as a "living document". The question of who should update this document was not resolved.

**USCG Operations** – Phil McGillivray and CDR Dupree provided an update on USCG operations. Phil explained that HEALY will be archiving routine data and observations. XBT and thermosalinograph data will go to NODC, MET data to PMEL and weather messages to the Navy.

Phil reported that all three icebreakers will be similarly equipped. Purchasing for the Polar Class ships has been an ongoing process. HEALY equipment replacement and upgrades will begin when the ship becomes operational. The Coast Guard has been discussing ways to more efficiently purchase common equipment for all three ships. The Polars have been having problems with vibration and its affect on the science freezers. This is a heads-up for HEALY testing.

**Jim Swift** – The AICC is available to do informational reviews for equipment purchases. The academic community can be of assistance in providing technical support that could help with equipment purchases, equipment maintenance, training and technicians at sea. The committee discussed what process is necessary to make the services available. Jim will alert the community that one or more institutions should consider submitting technical support proposals to NSF for HEALY services. It is important that the entire UNOLS community have an opportunity to compete for this work. The scope could start out small then grow as needed.

**General Discussion** – A need was expressed for NSF and the Coast Guard to clarify the language in the MOU that discusses scheduling. What role if any will the AICC play? The system should be compatible with the UNOLS scheduling system and take advantage of the currently existing tools on the UNOLS web site (i.e. ship time request forms and schedule posting).

**Membership status** – A brief discussion was held on membership terms of the AICC. After the meeting Jack provided the following:

The committee was established in Sep' 96. In review, Lisa and Dan had a two-year term originally and are therefore in their second term, to expire in Sep 01. This second term is for three years. Glenn, Kelly, and Jim are in the first year of their second term so each will have two more years, expiring Sep' 02. Joe and Larry are in the last year of their first term and are eligible for a second term, this time of three years. Terry will be completing the first term for Weingartner this year (Sep' 00). Since it is not spelled out in the UNOLS Charter it is possible to count this stint for Terry as a completion of Tom's term. If he chooses to re-up and is approved by the UNOLS Chair Terry could start a fresh term.

**Next meeting time and place** – Seattle, WA was selected as the next meeting place. It should be scheduled near commissioning time.

## DAY TWO

**SOO cruise** - Glenn Cota has been selected to be Chief Scientist on the next SOO cruise. The cruise can commence on either 15 Jun 00 or 15 Jul 00. Both POLAR STAR and POLAR SEA are scheduled for the Arctic this year. Glenn provide a list of potential participants and their programs, see [Appendix III](#).

**Scheduling Memo** – Simon Stephenson provided a draft memo on the scheduling process for HEALY. This explains the scheduling process and the relationship of NSF, the USCG and AICC.

**Phase IV planning** – The remainder of the meeting was spent in a discussion on planning for Phase IV science systems testing. Jack presented a week by week outline of the tests scheduled for Phase IV. Changes were made. The revised schedule and personnel assignment are included as [Appendix IV](#). Jack and John Freitag were tasked to pass along the schedule and the names of participating individuals to Al Gaiser. The committee was tasked to update various test memos and get them to John Freitag for inclusion in the Ice Trial Manual.

The following are miscellaneous comments concerning testing procedures:

How many XBTs will be needed to provide the necessary support for SeaBeam? Action for Dale Chayes. The Bathy 2000 needs to be tested while steaming into ice cover to see when the system begins to degrade. Need to check for interference with other acoustic equipment. OADS/XBT will need at least one test to be accomplished with a CTD cast for comparison purposes. Interference of the ship's radio with other ship equipment should be watched. Will the pan and tilt part of the CCTV operate in an ice environment?

Both starboard and after A-Frame must be tested in a cold water regime. The science hoist must be checked for operational limitations in high sea states.

Watch for slack wire in the winch system in open sea conditions where over the side work is normally conducted. Check the ability of the winch controls to change speeds rapidly. The climate-controlled chamber should have a continuous digital record throughout cruise. Add the pinger test to use with the CTD. Measure pressure in the uncontaminated science seawater system. Measure bubbles in the system for days not 2 hours. Take samples to run metals analysis. Need to install a pressure sensor at the outlet (Phil for action). Can the system be back-flushed?

CTD must include bottom approach to 10 meters of bottom (Jim to rewrite test memo).

Thermosalinograph should have a 160 hour testing period. Fluorometer should be tested for 160 hours (Terry to mark up test memo). A second test memo is needed for anchor first buoy launch and

recovery. Buoy should be set near the ice and left for several days. (Jack and John Freitag for action). Science towing, MOCNESS (Terry to review).

Uncontaminated seawater incubator, (Glenn to update). Need to coordinate ADCP Run from open water into ice to check for degradation and interference with other acoustic equipment. Coring: Jack is to check with Nick Piasias re box core to see if he can provide one, if not where can one be found? Dredging will be required as part of coring. Need to find dredge for warm water cruise.

Science objectives for four legs of Phase IV- The committee discussed the need to write up science objectives for the Phase IV science systems testing. John Freitag provided a draft of science objectives that he had been working on. John has been tasked to provide the committee with his draft objectives adjusting them for the realignment of test requirements as discussed above.

The meeting adjourned at 1230 hrs.

## APPENDIX I

### AICC Meeting Agenda -Day 1

**Wednesday, 12 January 2000 (0830-1700)**  
**NSF Headquarters, Room 365**

#### **0830-0945**

UNOLS reports  
 Agency Reports (NSF/OPP, NSF/OCE, ONR, etc.)  
 ARVOC report

#### **1000-1145**

Healy reports/updates  
 current status  
 schedule update  
 Healy Baltimore public relations visit planning  
 general information  
 VIP visits  
 SBI investigator visit  
 visit by teachers?  
 science posters & coordination  
 travel planning  
 specific assignments to AICC members & UNOLS

1145-1300 lunch

1300-1445

Healy science systems test program review current status, participants, programs  
 missing or delayed pieces (e.g., parts of Phase IV) teacher participation in Healy test program

1500-1700

If we get through the above agenda by the time of the afternoon break, as planned, I will spend the remaining time of Day 1 on detailed cruise planning for Phase IV. Although this is not whatsoever restricted to AICC members, the general audience should not feel obligated to stay.

**AICC Meeting Agenda. Day 2**  
**Thursday, 13 January 2000 (0830-1430)**

**NSF Headquarters, Room 370****0830- 0945**

Overview of Arctic icebreaker user ideas to date

Fall AGU icebreaker planning meeting -report

Ocean Sciences icebreaker planning meeting.- plans

How do we present and make available user ideas & proposal status. etc.?

What, exactly. should be the AICC role in expeditionary planning?

**1000-1200**

Coordination of Healy science cruise planning. tech support,  
and reporting needs

anticipated icebreaker science equipment

how to plan for acquisitions & modifications

2000> Science-of-Opportunity program

review Chief scientist for 2000 S.O.O.

**1200-1300 lunch****1300-1430**

AICC in committee-only (plus UNOLS) session to review current business and to discuss AICC membership overhaul.

**APPENDIX II****AICC- January 12, 2000**

<b>NAME,</b>	<b>AFFILIATION</b>	<b>PHONE</b>	<b>E-MAIL</b>
John Bash	UNOLS	401-874-6825	unols@gso.uri.edu
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Garry Brass	USARC	703-525-0111	uscgrnilgbrass@arctic
John Christensen	NSF/OPP	703-306-1029	govjchrist@nsf.gov
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Simon Stephenson	NSF/OPP	703-306-1029	sstephen@nsf.gov
Wayne Sukow	NSF	703-306-1613	wsukow@nsf.gov
Jim Swift	SIO	888-534-3387	jswift@ucsd.edu
Terry Whitledge	U Alaska	907-474-7229	53447@ims.uaf.edu

**APPENDIX III**

**2000 \$OO Programs**

PI	Institution	#	Agenc y	Funded	Location	Sample Freq	Sample type	Equip Needed	Subject
Bischof	ODU	1	NSF	Yes-SBI	Shelf-slope	Daily	Ice & benthic sed	Helo, Box & Ice corer	Ice & benthic sed
Cota	ODU	3	NASA	Yes	MIZ	2-4stns/d	Chl, Optical	CTD Rosette	Bio-optics
Garlich-Miller	USFWS	4	FWS	Pending	Outer MIZ	Daily??	Visual, Photo	Camera	Walrus
Harvey	CBLJUM	1	NSF	Yes	Any	Infreq?	Water & Ice	Rosette, ice corer, nets	Marker Lipids
Hughes	SPRI	2-3	Various	Pending	In Ice, MIZ	Continuous	Photos, Acoustic	None (220V)	Ice photogram
Lawler	UTex	2-3	NSF	Pending	Basin	1 Day only	Acoustic	None	Acoustics
Schliebe	USFWS	4	FWS	Yes	MIZ	Daily??	Visual	Helo	Polar Bears
Stephens	Umiami	1	NSF	Yes	S, S & B	???	100L SW	CTD Rosette	Radium
Tilku	NOAA	1-2	NOAA	Pending	N-wind Ridge	Continuous	Bottoms/Sub-btm Soundings	12 MHz PDR 3.5 MHz sub-bottom profiler	G&GP
Grebmeier	UTn	1-2	NSF	Yes	Diomede	N/A	N/A	Helo	Offload gear

Total = 19-22 w/o Grebmeier/Cooper

# APPENDIX IV

	LEG 1	LEG2	LEG3	LEG4
Start/End	St. Johns/Nuuk	Nuuk/Nuuk	Nuuk/Nuuk	Nuuk/St. Johns
Tentative dates	25 May-2 Jun	3 Jun-10 Jun	11 Jun-18 Jun	19 Jun-29 Jun
Chief Scientist	Swift	Swift	Swift	Swift
Scientist Coord	Falcher	Cota	Lewver	Clough
Admin	Freitag	Freitag	Beeh	Beeh
Teacher	Teacher 2	Teacher 2	Teacher 2	Teacher 2
Observers		Meece	Brass	
TESTS				
Fluorometer		Amos		
Met System				Findley
Science Mooring				Kemp plus 2
Towing		Whitledge		
Incubator		Amos		
Cranes	All	All	All	All
ADCP	Hummond			
Multi-beam	Lemmond		Operator	
SDN	Walden			Findley
Bathy 2000	Walden			Findley
ODAS/XBT	Walden			Findley
24 MC Science Comms	All	All	All	All
CCTV	All	All	All	All
A-Frames	All	All	All	All
Science Hoist	All	All	All	All
Coring			Pasias plus 2	
Climate Control				Findley
Fathometer	Walden			
Uncontaminated Seawater		Amos		
CTD		Martin		
Thermosalinograph		Amos		