Research Support Plan
I-476-M, Dr. Jeffrey Severinghaus

Collaborative Research: Replicate Coring at WAIS Divide to Obtain Additional Samples at Events of High Scientific Interest

Award Number: ANT – 1043421

Dr. Julie Palais, NSF-OPP, Program Manager

Jessie Crain, NSF-OPP, Research Support Manager

2012-13 McMurdo Station-Based Project

Compiled By: Jessy Jenkins

On-Ice Point of Contact: Jessy Jenkins

Denver: x2313

McMurdo: x2067

Change Management and Tracking

This table documents and tracks major changes that develop following RSP distribution.

Date	Description
3 Oct 2012	RSP issued to PI for concurrence
{Enter Release Date}	Final concurred RSP distributed

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COMPREHENSIVE RESEARCH SUPPORT INFORMATION

Purpose

This document summarizes and provides information about the resources allocated to the subject NSF-OPP award for the upcoming field season.

The support details have been developed in consultation with the Principal Investigator (PI), National Science Foundation (NSF), and Antarctic Support Contractor (ASC), and are based on the support levels approved in the Operational Notice for the award, and the specific seasonal needs as indicated in the 2012-13 season Support Information Package (SIP).

This document should be reviewed with all field team members. Any discrepancies should be presented to the ASC Implementer prior to deployment to Antarctica.

Field Project Overview

This associated project will acquire second and third ice cores from the borehole wall in order to replicate the main WAIS Divide ice core in areas of key scientific interest such as abrupt climate changes and volcanic sulfate horizons. These replicate cores will permit measurements that are currently impossible because of limited sample volume, and allow for validation of key scientific findings. Field activity will take place at the WAIS Divide ice core site using the established camp and support infrastructure; including a version of the DISC (Deep Ice Sheet Coring) drill with modifications for replicate coring.

This second field season of 2012-2013 will be dedicated to replicate coring, unlike the 2011-12 season, which was split between several different activities including replicate coring, borehole logging and deepening of the main borehole. No borehole logging or main borehole deepening will occur in 2012-2013.

It is anticipated that approximately 250 m of replicate core will be recovered this season, although the actual amount of core is very difficult to estimate due to the fact that replicate coring is a novel technology. The proposal called for 400 m of replicate core, and this stands as an upper limit.

All ice drilled this season (not to exceed 400 meters) will be returned to MCM for subsequent transport to the National Ice Core Laboratory. The companion Science Coordination Office SIP (I-477-M) contains all of the details and requirements for the ice core retro.

In addition and in anticipation of down time during ice core drilling, two small experimental projects are planned by Kari Peterson and Jihong Cole-Dai. A 2.0-2.5 m snow pit will be dug near the WAIS Divide camp to (1) sample recent snow (since 2009/2010) that may contain fallout of a volcanic eruption and (2) observe and record visible stratigraphy for annual layer determination. The second project will experiment with pH measurement on meltwater of fresh snow, to compare with pH measurement performed in the lab.

Outstanding Issues

Awaiting final agreed upon success criteria, associated date, and drafted decision tree to assist NSF in determining if an additional season would be required/requested/approved.

Deployment Dates

The table below shows the approved deployment plan for your group. The dates have been set by the PI, ASC and the NSF and cannot be changed without coordination and approval from your ASC Implementer. Any changes must be made no later than four weeks before scheduled deployment.

Last	First	Conus-CHC	CHC-MCM	MCM-CHC	Self Ticket

Last	First	Conus-CHC	CHC-MCM	MCM-CHC	Self Ticket
Beaudette	Ross	11/24/12	11/28/12	2/2/13	N
Cole-Dai	Jihong	12/16/12	12/20/12	2/2/13	N
Peterson	Kari	12/16/12	12/20/12	2/2/13	N

 (Dates are current as of 09/27/2012)

All dates are subject to change. The table below explains each column.

Column	Description
Conus-CHC	Dates participant is scheduled to leave the U.S (four days before Ice flight, with two nights in Christchurch).
CHC-McM	Date participant is scheduled to depart Christchurch for McMurdo Station.
McM-CHC	Date participant is scheduled to redeploy from McMurdo Station to Christchurch.
Self-Ticket	"Y" indicates the participant will purchase commercial airline tickets without support *or reimbursement from* ASC Travel. Self-ticketers must provide their itinerary to ASC Travel (deploy@usap.gov or fax 303-705-0742). ASC Travel will make hotel reservations in Christchurch upon request.

McMurdo Station Housing

The housing request worksheet, found online with the deployment paperwork, should have been completed by this time. If not, please submit it as soon as possible. It is available at http://www.usap.gov/USAPgov/travelAndDeployment/documents/ASC%20TL-100BM.pdf

Permits

The Principal Investigator is responsible for ensuring that all applicable permits have been obtained prior to deployment.

See appendix for more information.

Cargo

Science Cargo will provide the following support:

	Weight (lbs)	ROS	Comments
Southbound	205	2329 - 24 Nov 12	
COMAIR Retrograde	0	3054 - 23 Feb 13	
Vessel Retrograde	585	3100 - 10 Apr 13	

Keep in mind the following cargo-related information:

- Baggage, hand-carried items, and items purchased and shipped by ASC are not listed.
- ROS (Required On Site) is the Saturday closing the week that cargo will be delivered to the research station (McMurdo or South Pole Stations).
- Unapproved northbound COMAIR cargo will require approval from the NSF representative on station.

Environmental Documentation

The Principal Investigator is responsible for ensuring that all required environmental documentation has been completed before deployment.

Please contact your POC for more information, or in the event your POC cannot be reached, contact ASC's Environmental Manager, Nate Biletnikoff (telephone 1-800-688-8606 ext. 32225, e-mail nathan.biletnikoff.contractor@usap.gov). See appendix for more information.

Fuel and Liquid Waste Containment

The following containment and spill materials will be provided:

Category	Requested Item	Qty Requested	Qty Provided	Notes
Spill Kit	85 gal OP Spill Kit	0	0	
	Large Spill Kit	0	0	
	Medium Spill Kit	0	0	
	Small Spill Kit	0	0	
Secondary containment	18" x 18"	0	0	
	3' x 3'	0	0	
	4' x 4' or 5'	0	0	
	6' x 4' or 5'	0	0	

* WAIS Divide Camp will have communal spill kits and containment for use

Science Construction

No support requested.

Computers

Locally-generated (McMurdo Station) e-mail messages will be sent to the e-mail address indicated in the SIP for all team members. If the group has team members who were not identified in the SIP (example, "TBDs"), the Crary IT staff will add them to the McMurdo Station grantee list upon their arrival.

If any member of the group would like to have a McMurdo Station local account, or the group would like a 'group account' to facilitate the sharing of data and information while on station, these can be created upon your arrival either by informing the Help Desk or the Crary Lab computer coordinator.

Crary IT staff will also assist in setting up individuals with access to the Crary wireless and printers as requested.

Please reference the list of IT security guidelines at the end of this document for IT security questions.

Personal computers that are brought to Antarctica must have current anti-virus installed and have current definitions updated.

All Windows computers coming down to Antarctica running XP, Vista, or Windows 7 should be patched with the latest service packs and patched.

Linux and Mac OS systems must be patched to latest level of the OS that they are running.

Communications

Field Party Communications will provide the following support:

Category	Requested Item	Qty Requested	Qty Provided	Notes
VHF Radios	Motorola HT750	2	2	
	Motorola HT750 spare battery	0		
	Lapel Mic	0		

Category	Requested Item	Qty Requested	Qty Provided	Notes
	Solar Charger	0		
	AC Charger (Single Unit)	0	2	
	AC Charger (Bank Charger 6-slot)	0		
	Chest Harness	0		
	HT 750 Headset	0		
VHF Radios	VHF Base Station (G-G)	0		
	ICOM (G-A) Base Station, PWR supply, Antenna	0		
VHF Radios	**iCOM** G-A Handset	0		
	iCOM VHF Battery	0		
	David Clark headsets with PTT Mic, adapter	0		
	iCOM Battery charger (AC)	0		
VHF Radios	Thales VHF **Dual Band** radios	0		
	Thales VHF Combat headsets	0		
HF Radios	PRC1099 Field Kit "Orange Box"	0		
HF Radios	RT-7000 HF Radio with power supply, power supply cable, external speaker, handset, antenna cable, B/W antenna	0		
Iridium	Iridium Field Kit (incl. handset, external antenna, AC charger, 12V Vehicle charger, spare battery)	1	1	10 Nov 12 - 15 Feb 13 Active dates on card.
	Iridium SIM Cards	0		
	Iridium Base Station	0		
	Iridium Solar Panel	0		
	Iridium Data Kit	0		
	Iridium external 3.5" antenna	0		
	Advisor II/Advisor Gold Pager	0		
UPS	1KVA	0		
Wireless Internet to McM		YES	YES	Comms link to be supported by GOES system.
Radio Telephone Services		No		
Spectrum Management		No		
Black Gear bag	Size: (Small, Med, Lg.)	No		
Special		No	72 hrs	Install WAIS Camp Comms systems.

Field camp network service is provided primarily for operational and scientific purposes on a best effort basis due to limited infrastructure support. All field network services are a shared resource with other camps. Please keep this in mind when using this limited resource and try to limit use to direct science and operational needs so as not to impact other camps.

Crary Science and Engineering Center

Crary resources will be allocated to accommodate science groups as best possible. Due to limited space availability you may be required to share resources with other groups. For the same reason, the dates listed may not be the exact dates you entered in your SIP. **Please review this carefully as space will not be available before or after these dates, regardless of arrival and departure dates.**

Laboratory/Office Space

The following laboratory and/or office space will be provided:

Assigned Space	Room #	Start Date	End date	Sh/Ded	Comments
Cube Office	Telesciences A	15Dec-12	22-Dec-12	Dedicated	
Cube Office	Telesciences A	19-Jan-13	20-Jan-13	Dedicated	

At the end of your deployment, you will be required to complete a laboratory check-out with the Crary staff. Please include time for this in your plans.

Laboratory Instruments and Equipment

The following laboratory instruments and equipment will be provided:

Description	Stock Number	Qty	From Date	To Date	Field / Lab	Dedicated	Comments
Band saw for fresh water ice cores, Delta 28-203	D51729	1	20-Nov-12	1-Feb-13	Field	Y	Available in Lab for poled use only. TBD. Communication with science group ongoing.
ALCATEL MDL UM2010 VACUUM PUMP	D10700	1	20-Nov-12	1-Feb-13	Field	Y	
ALCATEL MODEL UM2015 VACUUM PUMP	D10701	1	20-Nov-12	1-Feb-13	Field	Y	
One Edwards high-vacuum active gauge. Also need a controller for the gauge, and some usual vacuum fittings.	TBD	1	20-Nov-12	1-Feb-13	Field	Y	Cryo-tech will issue when needed.

Laboratory Chemicals, Gases, Materials and Supplies

No support requested.

Laboratory Cryogens, Dry Ice and Blue Ice

No support requested.

Radioactive Materials

No support requested.

Staging and Storage Space

Staging and Storage Space is limited; if it is not listed in the RSP, there is no guarantee additional space can be found once you are in McMurdo.

Personal gear storage will be available through Science Cargo via a secured, unheated milvan. Please take advantage of this location to store your gear as other groups may be using the lab and office space while you are in the field.

On-Ice Staging

None requested.

Temporary On-Ice Storage

None requested.

Winter Over On-Ice Storage

None requested.

Over-winter storage is contingent upon funding for the following season or NSF approval. If you have questions, please refer to the USAP On-Ice Storage Policy # AIL-07-01 and the USAP Field Laboratory Over-Winter Storage Policy #AIL-09-01. Both can be found at: http://www.usap.gov/USAPgov/proposalInformation/#Policies

Scientific Services

Spatial Analysis, Remote Sensing, and GIS Support

GIS Support is now being handled by the Polar Geospatial Center (PGC). All requests for support can be directed to Michelle LaRue at larue010@umn.edu.

Geodetic Support

UNAVCO will work with grantees to provide support as requested within the guidelines of the NSF/UNAVCO agreement. Please contact UNAVCO with any support related questions:

Joe Pettit
UNAVCO Antarctic Support Project Manager
email: pettit@unavco.org
phone: (303) 381-7615

Seismological Support

Please contact IRIS/PASSCAL with any support related questions:

Paul Carpenter
PASSCAL Polar Manager
email: pcarpenter@passcal.nmt.edu
phone: (575) 835-6783

Ultraviolet Data Services

Please contact NOAA with any support related questions:

Patrick Disterhoft
NOAA Antarctic UV Monitoring Program, NOAA-EPA Brewer UV-ozone Monitoring Network (NUEBrew) Central UV Calibration Facility NOAA GMD
email: patrick.disterhoft@noaa.gov
phone: (303) 497-6355

Ice Core Drilling Support

ICDS-IDDO will work with grantees to provide support as requested within the guidelines of the NSF. Please contact ICDS-IDDO with any support related questions:

Tony Wendricks
ICDS-IDDO Project Coordinator
e-mail: tonyw@ssec.wisc.edu
phone: (608) 263-6755
http://www.ssec.wisc.edu/icds/

National Ice Core Laboratory (NICL) Ice Core Support Service

NICL will work with grantees to provide support as requested within the guidelines of the NSF. Please contact NICL with any support related questions:

Geoffrey Hargreaves
Curator, National Ice Core Laboratory
e-mail: nicl@usgs.gov
phone: (303) 202-4830
http://nicl.usgs.gov/

Research Associate Services

No support requested.

Meteorological Services

Meteorological questions, including questions about weather observation requirements, should be directed to:

Mike Carmody
ASC Meteorological Coordinator
e-mail: michael.carmody.contractor@usap.gov
phone (Denver): (720) 568-2310

Field Safety and Training

Participants will be required to complete the FSTP courses listed below prior to going into the field. For further details about each course, please see the attachment at the end of this document.

Participant	Required Courses	Requested Courses
Ross Beaudette	Snowcraft I (Happy Camper)	
Jihong Cole-Dai	Refresher	
Kari Peterson	Snowcraft I (Happy Camper)	

Field Medical Kit

Kit not required. WAIS Divide camp will be staffed with a medical provider.

Berg Field Center (BFC) Field Equipment

Name	Total Issued	UOI	Total Weight	Total Cube
Cargo/Duffle Bag	3	ea	9.00	0.90

Name	Total Issued	UOI	Total Weight	Total Cube
Ensolite Pad, 1/2"x28"x84"	6	ea	30.00	6.00
Pile Liner	3	ea	12.00	3.00
Pillow, Camp	3	ea	1.50	0.90
SLEEPING BAG, UNDER 6' TALL	3	ea	27.00	0.00
Snow Density Kit	2	ea	40.00	2.00
Thermarest	3	ea	15.00	3.00
Thermos, 1 QT Nissan (includes camo)	3	ea	7.50	0.90
Urine bottle, 32 oz.	6	ea	1.80	1.20
Water Bottle Warmer	3	ea	0.90	0.90
Water Bottle, 1 QT, Nalgene	6	ea	1.80	1.20
Approximate Weight/Cube			**146.50**	**20.00**

Mechanical Equipment Center (MEC)

No support requested.

Air Support

Fixed-Wing Aircraft

- Week ending 8 December: One LC130 mission will transport passengers and cargo from McMurdo Station to WAIS Divide.

- Week ending 29 December: One LC130 mission will transport passengers and cargo from McMurdo Station to WAIS Divide.

- Week ending 2 February: One LC130 mission will transport passengers and cargo from WAIS Divide to McMurdo Station.

Notes:
These dates are approximate and are subject to change due to weather, aircraft availability, logistical constraints, NSF priorities, etc. You will be notified of any changes and/or updates to your fixed-wing support.
Fixed Wing planning is based on a six-day flight week beginning on Monday and ending on Saturday of each week.

Helicopter

No support requested.

Diving

No support requested.

Icebreaker Support

No support requested.

Heavy Equipment and Explosives

No support requested.

Grantee Arrival Checklist

This checklist of briefings, trainings, and tasks is provided to aid in your coordination with the various work centers in McMurdo. The list has been tailored to reflect the most likely set of actions required of your group. Please review it and plan accordingly. Upon arrival in McMurdo, you may contact the various providers to confirm the scope of the activity and to schedule a suitable time and place for the meeting or training.

Dept	Type	Course Name/ Task	Who Needs It	Est Time	When activity occurs during the course of the season	Class/Task Date, Time, and Location	On-Ice Contact/ Phone Number
Air Operations	Meeting	Fixed Wing field plan review	Required for at least one team member of any group traveling on-continent via fixed wing aircraft.	30 minutes	Prior to departing for the field site	When: Schedule upon arrival in McMurdo Where: Building 165	Liz Kauffman / 2529
BFC	Briefing	Outdoor Safety Lecture	Required for anyone planning to hike in the vicinity of McMurdo. This training is OPTIONAL and in not needed to do field work, only to go on the approved recreational trails and roads around McMurdo.	30 minutes	Prior to hiking in the vicinity of McMurdo	When: 7 pm Tuesdays, 10:30am Saturdays Where: Crary Library	Meghan Walker / 2348
BFC	Task	Collect field equipment	Required for groups that will be utilizing BFC-issued field equipment.	1/2-2 days	At least 4 days prior to departing to a field site if gear will be transported by fixed wing or helicopter	When: Anytime during normal work hours (Mon-Sat, 8am-5pm), no scheduling required Where: BFC/Bldg 160	Meghan Walker / 2348
BFC	Task	BFC Equipment clean-up and Returns	Required for groups who utilized BFC equipment.	Variable depending on field gear	Upon return from field and before redeploying to New Zealand	When: Schedule upon return from the field for anytime during normal work hours (Mon-Sat, 8am-5pm). Where: BFC/Bldg 160	Meghan Walker / 2348
Comms-MacOps	Task	Receive Communications Equipment	Required for grantees using communications equipment as part of their field plan.	30 minutes to 1 hour	Prior to deployment to field site and after the Mac Ops Pre-Field Communication Briefing	When: Schedule upon arrival in McMurdo Where: Bldg 159	Brian Dornick / 2796

Dept	Type	Course Name/ Task	Who Needs It	Est Time	When activity occurs during the course of the season	Class/Task Date, Time, and Location	On-Ice Contact/ Phone Number
Crary	Briefing	Crary Laboratory Orientation	Required for all USAP participants with a Crary KeyCard. Walk-throughs are tailored to each groups' specific use of the facility, and returning grantees will be given a brief refresher at the start and can leave any time after.	15-30 minutes	Prior to using the Crary facility	When: Schedule upon arrival in McMurdo Where: Crary Lab	Crary Lab Supervisor / 4169
Crary	Briefing	Laboratory Safety	Required for all USAP participants with a Crary KeyCard.	15 minutes	Within the first week of being issued a Crary Lab key card.	When: Every Monday and Thursday, 8am Where: Crary Library	Crary Lab Supervisor / 4169
Crary	Task	Pick up all allocated lab equipment	Required for any grantee with lab supply allocations.	Variable depending on allocations	As needed	When: As needed Where: Crary Lab Supply	Crary Supply Lead / 4170 - Bamma Mellott
Crary	Task	Pick up all project cargo shipped to McMurdo	Required for any grantee that shipped cargo to McMurdo.	Variable depending on cargo	As needed, prior to deployment to the field	When: Anytime during normal work hours, no scheduling required Where: Crary Lab Supply	Crary Supply Lead / 4170 - Bamma Mellott
Crary	Task	Confirm permits for science samples	Required for all grantees that will be shipping or handcarrying samples northbound with the exception of samples that are traveling on the resupply vessel.	Variable depending on number of samples	At least two weeks before redeployment	When: Anytime during normal work hours, no scheduling required Where: Crary	Crary Lab Supervisor/ 4169 Michael Davis/ 2546
Crary	Task	Crary Lab Clean up and Returns	Required for grantees who utilized Crary lab equipment and/or space.	Variable depending on lab equipment and space used	Prior to redeployment	When: Schedule prior to redeployment Where: Crary Lab	Crary Lab Supervisor / 4169
Deployment-Redeployment	Task	Submit Redeployment Forms	Required for all grantees.	15 minutes	Submit forms to the Implementer at least 2 weeks prior to redeployment.	When: Anytime during normal work hours, scheduling not required	Various

Dept	Type	Course Name/ Task	Who Needs It	Est Time	When activity occurs during the course of the season	Class/Task Date, Time, and Location	On-Ice Contact/ Phone Number
						Where: Various	
Environmental	Briefing	Environmental Field Brief	Highly suggested for all personnel that will be in the field at any location outside of McMurdo; including the LDB facility.	15 minutes	Prior to deployment to field site	When: Every Monday and Thursday at 8:15am Where: Crary Library	Cindy Dean / 2581
Environmental	Training	Protecting Antarctica's Environment	Required for all USAP participants.	17 minutes	All deploying USAP employees will watch video during their clothing issue at the CDC	During clothing issue at the CDC; if they don't watch the video at this time, a time on the ice will be organized.	Cindy Dean / 2581
FSTP	Training	Refresher; Snow Craft I & Sea Ice Safety Training (aka PUSH course)	Required for all returning USAP personnel who plan to work outside the vicinity of McMurdo station and the ice runway AND have attended a Snow Craft I and/or a Sea Ice course within the last 5 years.	4 Hours	Prior to deployment to field site.	When: Scheduled prior to arrival in McMurdo; course is offered 2-3 times a week throughout the mainbody season Where: SSC	FSTP Scheduler / 2356

Dept	Type	Course Name/ Task	Who Needs It	Est Time	When activity occurs during the course of the season	Class/Task Date, Time, and Location	On-Ice Contact/ Phone Number
FSTP	Training	Snow Craft I (aka Happy Camper/Snow School)	Required for all new USAP personnel, regardless of skill level and previous experience, who may travel away from McMurdo Station or any of the Airfield areas. Also required for all personnel returning to the Antarctic after a break of five or more years. All participants traveling via helicopter will be required to complete the helicopter safety portion on the Snowcraft 1 course.	2 days, 1 overnight	Prior to traveling to field site	When: Scheduled prior to arrival in McMurdo; course is offered Tuesday-Wednesday and Friday-Saturday Where: SSC and Ice Shelf	FSTP Scheduler / 2356
IT	Task	Meet with IT staff to bring personal computers online at McMurdo	Required for any USAP participant using a personal computer on the USAP network.	15 minutes to 1 hour	Prior to using personal computers on station	When: Anytime during normal work hours; no scheduling needed. Where: Crary Lab or contact the McMurdo helpdesk	Holly Troy / 4242
IT	Training	Information Security Awareness	Required for all on- and off-Ice users of the USAP IT infrastructure.	40 minutes	Prior to logging onto the USAP network. Training requirement can be completed online before deploying to Antarctica. Link: http://www.usap.gov/onlinelearningcenter/ Log-in code: 91nbe1a3	When: Anytime, no scheduling needed Where: Online course	Holly Troy / 4242
NSF and RPSC	Meeting	Arrival Brief	Required for all personnel arriving at McMurdo Station	60 minutes	Upon arrival in McMurdo	When: Immediately upon arrival in McMurdo Where: 155 dining hall or Chalet	Chalet Admin. / 4168

Dept	Type	Course Name/ Task	Who Needs It	Est Time	When activity occurs during the course of the season	Class/Task Date, Time, and Location	On-Ice Contact/ Phone Number
NSF and RPSC	Meeting	Science Inbrief	Required for the first arriving members of the field team. HIGHLY RECOMMENDED for all field team members.	20-30 minutes	The morning after arrival in McMurdo	When: Scheduled upon arrival in McMurdo, usually takes place the morning after arrival Where: Chalet	McM-S&TPS Manager / Cara Sucher
NSF and RPSC	Meeting	Implementer Meeting(s)	Highly recommended for any PI, co-PI or lead of a deployed science group	15-60 minutes	Prior to deployment to field site.	When: Schedule upon arrival in McMurdo Where: TBD	Implementer
NSF and RPSC	Meeting	Outbrief	Recommended for anyone who would prefer an outbrief discussion to filling out an outbrief survey.	15-60 minutes	Two weeks before planned departure from McMurdo	When: Schedule at end of field season Where: Chalet	Crary Admin. / 4168 Implementer
NSF and RPSC	Task	Complete all end of season surveys and paperwork	Outbrief and IT surveys are highly recommended for any PI, co-PI or lead of a deployed science group. The Environmental End of Season Report is required for all grantee groups and technical events.	Varies	End of season before leaving McMurdo	When: Anytime at end of season prior to redeployment Where: Anywhere	Crary Admin. / 4168 Implementer
Science Cargo	Task	Check on status of southbound cargo	Required for any grantee with cargo that has not yet arrived in McMurdo.	Variable depending on cargo	Upon arrival in McMurdo	When: Anytime during normal work hours, no scheduling required Where: USAP Science Cargo building - Bldg 73	Michael Davis / 2546
Science Cargo	Task	Hazardous cargo and equipment certification	Required for all grantees that have hazardous cargo that needs to go out to the field by helicopter or fixed wing	2-3 business days	Prior to departure for field site; All hazardous cargo must be dropped off for certification a minimum of 3 business days before fixed wing air travel and 2 business days before helicopter	When: Anytime during normal work hours, no scheduling required Where: USAP Science Cargo building - Bldg 73	Lisa Gacioch / 2072

Dept	Type	Course Name/ Task	Who Needs It	Est Time	When activity occurs during the course of the season	Class/Task Date, Time, and Location	On-Ice Contact/ Phone Number
			aircraft.		travel		
Science Cargo	Task	Prepare cargo and equipment for transport to field site via fixed wing aircraft	Required for all grantees that have cargo that needs to go out to the field by fixed wing aircraft.	1-3 days to pack cargo, variable depending on the amount of cargo	Prior to departure for field site; All standard cargo must be brought to Science Cargo a minimum of 3 business days before the scheduled flight. See hazardous cargo task for haz cargo information.	When: Anytime during normal work hours, no scheduling required Where: USAP Science Cargo building - Bldg 73	Michael Davis / 2546 Lisa Gacioch / 2072
Science Cargo	Task	Prepare/Pack Northbound Cargo	Required for all grantees shipping cargo northbound from McMurdo.	Variable depending on the amount of cargo	As soon as possible once field work is completed.	When: Anytime during normal work hours, no scheduling required Where: USAP Science Cargo building - Bldg 73	Michael Davis / 2546 Lisa Gacioch / 2072
Waste Management	Briefing	Waste Management - Sorting Trash	Required for all support contractors; VERY highly recommended for grantees.	60 minutes	Prior to departure to field site	When: Schedule upon arrival in McMurdo Where: Varies	James VanMatre / 2740
Waste Management	Task	Package and Label Field Waste	Required for all grantees that generated waste in the field.	Variable depending on type and amount of waste.	Upon return from field site prior to redeployment	When: Anytime, no scheduling required Where: Varies	Mark Furnish / 2740 (Waste Manager) Mindy Piuk (Haz Mat'l Specialist) / 4178

ADDITIONAL INFORMATION AND TABLES

Pre-Deployment Information

Medical

It is the PI's responsibility to ensure that all dental, medical and travel processing requirements are addressed in a timely manner for all members of the deploying party.

Upon receipt of this RSP, participants should have already submitted medical and dental exam results to ASC. The status of the field team's PQ processing will be updated in the POLAR ICE application. Additionally, weekly updates are provided to the PI or Co-PI via e-mail. If you are not receiving these status reports and would like to, please contact your ASC POC.

Travel

Ticketing

Commercial airline ticketing cannot be initiated until you physically qualify (PQ). Tickets must be purchased by ASC Travel *no later than three weeks* before your scheduled departure. If you cannot PQ in that time frame, the alternatives are to 1) contact the Program Manager and request a waiver, 2) change your travel dates, or 3) purchase a ticket with no reimbursement from the USAP.

If you purchase your airline tickets without the assistance of ASC Travel, you must provide your itinerary to deploy@usap.gov or via secured fax at 303-705-0742 at least two weeks prior to departure in order to schedule hotel accommodations and trainings in Christchurch (if applicable).

If you have not yet filled out your travel/deployment paperwork, please do so as soon as possible (http://www.usap.gov/USAPgov/travelAndDeployment/documents/Travel%20Packet%20g.pdf). Paperwork should be submitted at least eight weeks before deployment.

Excess Baggage

The NSF does not authorize ASC to issue excess baggage coupons or to reimburse excess baggage costs on commercial airline carriers.

Excess baggage on Ice flights may be allowed (i.e., on flights to/from McMurdo and South Pole Stations), however, NSF approval is required. Use the Excess Baggage Form to request approval (http://www.usap.gov/USAPgov/travelAndDeployment/documents/ASC%20TL-100AU.pdf).

Shipping via the USAP Cargo System is the preferred method of transport.

Station Arrival Information

After arrival at McMurdo Station, a general orientation will be provided to the field team.

Additionally, the first field team members to arrive in McMurdo will be invited to a Science In-Brief to discuss project requirements, meet essential ASC personnel, and review mandatory briefings and trainings. The on-ice field team leader for the project should be identified by the science group at this time.

Each field team member must complete the required briefings and trainings appropriate to the project's research before heading into the field.

Safety, Environmental Documentation and Permitting

Safety

Antarctic Support Contractor is dedicated to safe operations at McMurdo and all other field locations. While deployed to Antarctica the entire research team will be expected to

maintain a high awareness of safe conduct and comply with safety and health related guidance from the NSF and ASC management.

Environmental Documentation

To comply with the Antarctic Conservation Act, the PI or designee is required to track and report planned or accidental disturbances to the environment resulting from their research. Please be prepared to track and report geographic locations of disturbances that result from the project's field work (e.g. tent camps, helo landing sites, sampling sites, etc). An environmental end of season report template will be provided to each team upon arrival in Antarctica during their Inbrief. Please become familiar with the document so the form can be completed at the end of the field work and submitted to the ASC Environmental Department before leaving Antarctica.

Dry Valleys

If the field team will be working in the McMurdo Dry Valleys Antarctic Specially Managed Area (ASMA), each team member is required to attend a Dry Valleys ASMA Briefing prior to traveling to the field. Briefings are offered several times per week in Crary Lab. Additionally, all USAP participants working in the Dry Valleys are required to comply with all provisions of the Dry Valleys ASMA Management Plan. A copy of the plan is provided during the ASMA briefing, along with a review of information specific to each field party.

Permits

Ministry of Agriculture and Forestry (MAF) permits are required to transship and import samples through and into New Zealand. Due to the large volume of permit requests and processing limitations, MAF permits should be in place prior to deployment. All permits must be presented to MAF upon transit through New Zealand with samples. On-ice applications will be limited to emergency situations. For MAF application procedures and forms, please contact Andrea Tibbotts at Antarctic Support Contractor (NZ) Limited, CHC-MAFPermits@usap.gov.

Antarctic Conservation Act (ACA) permits are required to enter Antarctic Specially Protected Areas (ASPA). For ACA application procedures and forms, please contact Nadene Kennedy at NSF, nkennedy@nsf.gov. ACA permits require three months processing time.

The United States Department of Agriculture (USDA) http://www.aphis.usda.gov/ regulates importation of samples into the US. It is the responsibility of the PI to determine if a USDA permit is required. Permits can take up to 16 weeks for clearance.

FSTP Course Descriptions

Snow Craft I (aka Happy Camper/Snow School): Classroom and hands on two-day overnight outdoor survival course. The class will also cover helicopter safety.

Snow Craft II: Basic Mountaineering Skills; glacier travel and crevasse rescue training for parties planning to travel in crevassed areas.

Refresher; Snow Craft I & Sea Ice Safety Training (aka PUSH Course): Classroom and hands on training to re-familiarize participants with topics covered in Snowcraft I, Sea Ice, and helicopter safety training.

Sea Ice Safety: Classroom and field training about safe sea ice travel and survival techniques.

Altitude Awareness: Classroom training on the prevention and treatment of physiological effects caused by traveling to altitude.

Handheld GPS Instruction: Classroom and practical training on the basics of operating a BFC-issued handheld GPS.

IT Security Guidelines

Computer Security

The US federal government requires security and operational practices for computing systems in all government funded programs. The United States Antarctic Program's (USAP) compliance with this federal requirement entails the screening of all computers prior to connecting to the USAP network (wired or wireless). The following requirements are aligned with the NSF Computer Security Policy and apply to all personal, science, and business equipment that will connect to the USAP network. Please direct inquiries to the USAP Help Desk at (720) 568-2001 or helpdesk@usap.gov.

General System Requirements

Administrator Access

Obtain the Administrator password for personal computers prior to deployment. Technicians must have the authority to log on to personal computers at an Administrator level. This enables the screener to accurately review the system configuration and run screening software. If an Administrator password is not available, the screening process, as well as the ability to connect to the USAP network and its resources, will be delayed.

Media

Participants should consider bringing their laptop's original OS installation disks and software registration numbers to assist the computer staff in repairing them, in the unlikely event that they experience hardware or software failures either in transit or while on the Ice.

Connectivity

Participants must provide all the equipment necessary to connect the computer system to a network, including the NIC (network interface card), cables, external adapters, device drivers, etc. All equipment must be in working order.

Antivirus

For computers running McAfee antivirus software, the Admin ID and password are needed to configure the software to update automatically from a local USAP server. Antarctic Support Contractor (ASC) can provide current DAT files for McAfee and Norton users. All other antivirus software users must ensure proper updates are installed and the computer is virus free prior to deployment.

Patches

All computing devices should be updated to the current levels for the operating system and security patches. Applications should also be updated, as provided by the manufacturer to include the latest security patches.

Client and Server Software

- Client software used for the purposes of email and web browsing, and other client software, such as SSH and SFTP are permitted.
- Web cameras for training, meetings, educational outreach programs, official business, or personal use is permitted according to NSF policy and with the approval of NSF
- Peer-to-peer (P2P) software, e.g., Kazaa and BitTorrent, are not allowed.
- Email server software that provides SMTP/POP port services should not be used without prior permission.

- Web server software that provides HTTP/HTTPS/SFTP services should not be utilized without prior permission.
- Use of non-USAP supported Voice-over Internet Protocol (VoIP) software (Skype™, etc.) is prohibited.
- Network management services, like DNS and SNMP, should not be running.

Personal Use of the Internet:

Some limited personal use of Internet services is permitted, provided it does not interfere with the participant's work or the work of others. Extreme care must be taken regarding content matter. Typical authorized limited personal Internet use includes recreational web-browsing of a reasonable duration, during off-duty hours, that does not violate USAP policy or the Enterprise Rules of Behavior (EntROB) and does not conflict with mission activities.

Operating System Specifications

Operating systems (OS) have certain criteria that must be met in order to pass the computer screening process. All operating systems should be currently supported by the operating system vendor.

If a user's OS is not in one of the below categories, their connection to the network must be evaluated at a USAP location by an IT technician prior to connecting to the USAP network.

Apple

Mac OS systems running current antivirus software are permitted to connect to the USAP infrastructure at any station.

Linux

Linux systems/partitions running current antivirus software are permitted to connect to the USAP infrastructure at any station. If the computer is configured to dual boot with Microsoft, the Windows partition must comply with the criteria stated below for Microsoft systems.

Microsoft

Ensure the following conditions are met:

- Windows XP Service Pack 3 (SP3) plus all hot fixes. Windows Vista (SP1) with all hot fixes or Windows 7 (SP1) with all fixes.
- Current antivirus software with latest virus definition files (DAT files).
- Complete/full system virus scan within the previous two weeks.

Computer Screening Process

Screening technicians will gather computer information and make it available to all technicians performing screenings on station. Users found using the USAP network without a screening rating of PASS may be limited in their network access until updates can be made or additional security can be applied. Computers will be screened for supported operating systems, current antivirus software, and preferably automatic updates for both. If possible, applications should have the latest updates as well.

Continuous Monitoring

All users' devices (including governmental, commercial, grantee, and personal) connected to the USAP information infrastructure are subject to continuous monitoring for quality of service, security vulnerabilities, attacks, threats, risks, and violations of the EntROB. Users are required to work with their IT point of contact (POC) to remediate weaknesses in their systems in a timely manner to reduce the risks to the USAP environment. NSF Management may rate limit,

segregate, block, or disconnect without notice any user or device that poses an unacceptable threat or risk to the USAP. Should your system be identified as having security vulnerabilities which pose a risk to USAP resources or other science projects, you will be expected to remediate those vulnerabilities within a reasonable time frame.

Wireless Encryption

Use of USAP provided wireless access points at USAP locations must be approved via local IT personnel before access is provided. Since a greater level of insecurity exists on a wireless network, data transmitted over the wireless network may not be secure, and appropriate precautions should be taken. WiFi Protected Access (WPA) is the minimum requirement.

USAP Firewall

Due to changes in the USAP information security posture directed by NSF OPP, our approach to firewall management has changed. If you require connectivity other than e-mail, outgoing file transfers, or web-based applications between your workstations and other systems at your home institution or another collaborating location, you will need to contact us for approvals and to set up the connection through the firewall.

Note   If you have already supplied information and have received approval for this through the SIP/RSP process, there is no need to re-contact us.

Outbrief Notification Letter

Dear Researcher,

After feedback from the PI community, NSF made improvements to the outbrief that were first implemented for the 2011/2012 season at all stations and the vessels.

The most significant change to the process was that NSF is now the initial recipient of outbrief information and will be responsible for developing a report of issues to be addressed with the Antarctic Support Contractor.

NSF is no longer requiring a face-to-face outbrief at the end of your field season. It will still be possible to schedule a face-to-face meeting but your project staff must request it. If you wish to have a face-to-face outbrief please contact the appropriate person: McMurdo Crary Administrator, Palmer Lab Manager, South Pole Science Support Manager, or Marine Projects Coordinator. When scheduling a face-to-face outbrief, please specify which work centers you would like in attendance or whether you want to only meet with NSF.

All science and technical events are now being asked to fill out an online survey within four weeks of redeployment. The purpose of this survey is to gather information on the effectiveness of planning and implementation of USAP science and technical programs in Antarctica and on the research vessels. Although completion of this report for NSF is not mandatory, your input is essential for ensuring high quality science and technical project support.

Once your survey results are received, they will be routed to the cognizant Program Manager in NSF's Office of Polar Programs. The Program Manager will review your responses and contact you to provide an opportunity to discuss any issues identified.

At the end of the season all survey results will be compiled and discussed at an After Season meeting with the Antarctic Support Contractor. For significant issues identified in outbrief surveys you will be notified of actions that will be taken to address these issues.

Thank you in advance for providing input on the support you have received this season. We would also appreciate any thoughts you have on the changes that have been made to the outbrief process.

If you have any questions about this process, please contact your cognizant Program Manager.

Terms and Acronyms

Term	Definition
ACA	Antarctic Conservation Act.
BFC	Berg Field Center. The facility at McMurdo Station that houses and distributes field party equipment such as camping gear, waste disposal supplies and sleds.
CHC	Christchurch, New Zealand. The departure point for groups deploying to the Antarctic continental research stations.
CONUS	Continental United States.
DSG	Deployment Specialist Group. The organization within ASC that makes participant travel arrangements.
ECW	Extreme Cold Weather. The clothing and personal gear loaned to participants during their Antarctic deployments.
MAF	New Zealand Ministry of Agriculture & Forestry.
MCM	McMurdo Station.
MEC	Mechanical Equipment Center. The facility at McMurdo Station that houses and distributes mechanical equipment, such as generators, vehicles and solar power units.
PI	Principal Investigator.
POC	Point of Contact. The person assigned to your project for planning the logistical support that will be provided to you by ASC during your fieldwork. Your on-ice POC may be different from the one assigned during the planning phase of your logistical support.
PQ	Physical qualification.
PSM	Planning Support Manager.
PSS	Planning Support Specialist.
PSC	Planning Support Coordinator.
ASC	Antarctic Support Contractor. The support contractor providing logistical support to grantees in Antarctica.
RSP	Research Support Plan. This document which describes the support to be provided to field parties.
SIP	Support Information Package. An online form that describes support logistics, equipment and supplies requested by science groups.
ASPA	Antarctic Specially Protected Area.
TRW	Travel Request Worksheet.
USAP	United States Antarctic Program.