

Research Support Plan

I-477-M, Dr. Kendrick Taylor

**Project Title: Investigation of Climate, Ice Dynamics, and Biology, Using
a Deep Ice Core from the West Antarctic Ice Sheet Ice Divide**

Award Number: 0440817

2006-2007 Field Season

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06 October 2006

McMurdo Station Based Project

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Terms and Acronyms

Term	Definition
ACA	Antarctic Conservation Act.
BFC	Berg Field Center. The facility at McMurdo 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 RPSC 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 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 RPSC 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.
RPSC	Raytheon Polar Services Company. 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.
ASP	Antarctic Specially Protected Area.
TRW	Travel Request Worksheet.
USAP	United States Antarctic Program.

General Project Information

Raytheon Polar Services Company is committed to providing a safe and healthy workplace for all United States Antarctic Program participants. At your science inbrief you will receive a letter and the Laboratory Code of Conduct clarifying the roles and responsibilities of researchers and RPSC personnel in ensuring a safe working environment in all laboratories. Please review this information with your team members. After arriving on station and before going into the field, your field team members will be required to attend field safety training appropriate to your research requirements. While deployed to Antarctica your 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 RPSC management.

Shortly after you arrive at McMurdo, a general orientation will be provided to the field team. Additionally, basic support and laboratory briefings on site will review the details of support for the project's field season. Field team leadership throughout the season should be identified at these meetings, including close-out responsibilities at the end of the season. There may be additional briefings and training, according to the needs of your project.

The PI will ensure that all applicable permits and environmental documentation has been completed prior to deployment. Contact RPSC's Acting Environmental Manager, Nate Biletznikoff (telephone 1-800-688-8606 ext. 32225, e-mail nathan.biletznikoff@usap.gov) for more information.

Participant Information

It is the PIs responsibility to ensure that all dental, medical and travel processing requirements are addressed in a timely manner. **Participants' medical and dental exam results should already be submitted to RPSC** to ensure that physically qualified (PQ) status is obtained in time for ticketing. You should also turn in your travel request worksheet as early as possible. In order for reservations to be made and tickets to be issued, PQ status must be granted, and by NSF requirement, RPSC cannot initiate ticketing less than two weeks prior to a scheduled departure. In such situations, your alternatives are to 1) contact your program manager and request a waiver, 2) change your travel dates, or 3) purchase your own ticket with no reimbursement from the USAP.

Each participant who purchases their airline tickets without the assistance of RPSC must provide their itinerary to deployment@usap.gov or via fax at 303-799-6647. This information ensures that the participant will receive meet and greet services during their travel to Christchurch, have hotel accommodations and be issued a date and time to obtain cold weather clothing (ECW).

The status of your field team's PQ processing (as of the date of this report) is available in the POLAR ICE program. Weekly updates are provided to the PI or Co-PI via e-mail. If you are not receiving these status reports, please contact RPSC Medical at medical@usap.gov.

The table below shows the approved deployment plan for your group. The Principal Investigator, RPSC and the NSF have set these dates. Changes must be coordinated with your RPSC POC no later than four weeks before scheduled deployment. Please note that RPSC is not authorized to ticket participants for any other dates than indicated below without approval from your RPSC Science Support Point of Contact. Also note that even if you have approved excess baggage southbound, before redeployment all northbound excess baggage requests require approval from the McMurdo Station NSF Representative on site.

Name	CONUS-CHC	CHC-MCM	MCM-CHC	Self-Ticket
Hargreaves, Geoffrey	1/14/07	1/18/07	1/25/07	N
Souney Jr., Joseph	11/12/06	11/16/06	12/11/06	N

(Dates are current as of 09/25/06)

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.
CHC-MCM	Date participant is scheduled to depart Christchurch for McMurdo.
MCM-CHC	Date participant is scheduled to redeploy from McMurdo to Christchurch.
Self-Ticket	“Yes,” indicates the participant will purchase airline tickets without the assistance of RPSC. Self-tickers must provide their itinerary (deployment@usap.gov or fax. 303-799-6647). RPSC will arrange self-tickers’ hotel accommodations in Christchurch, meet them at the airport, schedule a date and time to obtain cold weather clothing and make sure they get a seat on the flight to Antarctica.

McMurdo Housing

You should have received NSF housing guidelines and a housing request worksheet with your deployment packet. If you have not already done so, please submit the housing request worksheet as soon as possible. The worksheet is also available at <http://www.polar.org/deploymentPacket/granteeTeventPacket.htm>.

Permits

Please note: It is the responsibility of the Principal Investigator to obtain any required permits before deployment.

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 Hope Roger at Raytheon Polar Services (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.

Environmental Documentation

To comply with the Antarctic Conservation Act you are required to track and report disturbances to the environment as a result of your research, planned or accidental. An environmental end of season report template will be provided to you when you arrive in Antarctica. Please become familiar with it so you can fill it out at the end of your field work and submit it at your outbrief meeting before leaving.

If you are going to the McMurdo Dry Valleys, you will be required to comply with the Dry Valley Antarctic Specially Managed Area plan. Please be prepared to track and report geographic locations of the following disturbances in the Dry Valleys that result from your project: Tent camps, helo landing sites, sampling sites. This information must be submitted electronically to RPSC’s Environmental Department before your outbrief meeting. An electronic template will be provided.

Fuel and Liquid Waste Containment

Fuel and liquid waste containment will be provided by the WAIS Divide camp.

Cargo

Please note that any unplanned northbound COMAIR cargo (not listed below) will require approval from the McMurdo Station NSF Representative on site.

Southbound Cargo

<u>Lbs</u>	<u>ROS</u>	<u>Remarks</u>
50	11 Nov (6315)	

COMAIR Retrograde

<u>Lbs</u>	<u>ROS</u>	<u>Remarks</u>
0		

Vessel Retrograde

<u>Lbs</u>	<u>ROS</u>	<u>Remarks</u>
4730	10 Apr (7100)	

Notes:

- Baggage and hand-carried items are not "cargo" and are not listed.
- Items purchased and shipped by RPSC for grantees are also not listed here.
- ROS (Required On Site) is the Saturday at the end of the week that cargo will be delivered at the research station (MCM or SP).
- Unplanned northbound COMAIR cargo will require approval from the NSF representative on station.

Science Construction

No support requested.

Computers

The Crary Lab will provide the following support:

- Your group's grantee-supplied laptops and computers will be connected to the LAN.

McMurdo E-Mail:

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

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

NOTE: Security Requirements

Due to NSF information security requirements, all computers must be inspected by station IT staff before connecting to the network. A scan will be run to identify security vulnerabilities, and anti-virus software updates and operating system security patches will be installed if the system is not current. To gain access to the wireless network, NICs (network interface cards) must be registered with the IT staff. Please have an administrative user id and password for all computers that you bring to Antarctica.

Communications

Information Technology-Communications will provide the following support:

Field Dates: 21 Nov 2006 to 25 Jan 2007

- 1-IT-COMMS-HT-750 Handheld Radio
- 1-IT-COMMS-HT750 AC Charger

Laboratory Space

The following Crary Laboratory space has been allocated:

-25° Ice Core Transfer Facility (ICTF) storage, shared

*Because of the dynamic nature of the laboratory and increased demand for space, your allocation may change from that listed above. Please note that due to limited space availability, the dates above **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. Dedicated space is in short supply, so we respectfully request that you be prepared to make your space useable to other groups during all field deployments. Labs and offices are for research only; field equipment should be stored in BFC or field party cages at all time.*

Laboratory Instruments and Equipment

No support requested.

Laboratory Chemicals, Gases, Cryogenics, Dry Ice, Blue Ice

Liquid nitrogen will be available during the austral summer. If an unanticipated need arises, please contact the Crary Lab Staff for assistance in getting proper equipment and training to support your requirements. Please contact your POC if your requirements change and increased usage is expected.

Dry ice and blue ice are available on a continuous basis during the austral summer only. Dry ice and blue ice are located in the Phase Two South Loading Dock freezers and are self-serve. Please contact the lab staff for assistance if your requirements change significantly.

Laboratory Materials and Supplies

Reports listing laboratory materials and supplies procured or pulled from stock for your project are at the end of this document. Please note that the list is current as of the date on the report.

Radioactive Materials

No request for use of radioactive materials.

Diving

No support requested.

Analytical Support

RPSC no longer manages analytical services at the Crary Lab. Analytical instrumentation and some technical support is managed through the McMurdo LTER, B-428-M. Requests for support should be coordinated with Dr. John C. Priscu, Montana State University (jpriscu@montana.edu).

Research Associate Services

No support requested.

Spatial Analysis, Remote Sensing, and GIS Support

No support requested.

Global Positioning System (GPS)

No support requested.

Ultraviolet Data Services

No support requested.

Ice Core Drilling Services (ICDS)

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

Tony Wendricks
ICDS Project Coordinator
e-mail: tonyw@ssec.wisc.edu
phone: (608) 263-6755
<http://www.ssec.wisc.edu/a3ri/icds/>

Berg Field Center (BFC) Field Equipment

Please see table at the end of this document for the BFC allocation.

Field Safety

All new USAP personnel who may require overnight stays away from McMurdo Station (or the Williams Field Complex) will be required to complete Snowcraft I prior to going to the field. This is a two-day overnight course. All participants traveling via helicopter will be required to complete a helicopter safety course. Personnel embarking on day trips on the sea ice will be required to complete a sea ice course. All returning USAP personnel going into the field and with prior attendance of a Snowcraft I and/or a sea ice course may attend a refresher-training course. This course is approximately 5-6 hours and includes the helicopter safety course. Personnel returning to the Antarctic after a break of five or more years do not qualify for refresher training and must attend full courses again. For parties traveling in crevassed areas, Snowcraft II or a demonstration of crevasse rescue skills will be required.

Fixed-Wing Aircraft

- Week ending 02 December: LC-130 or Kenn Borek aircraft will transport one science team member and their gear from McMurdo Station to WAIS Divide Camp.
- Week ending 09 December: LC-130 or Kenn Borek aircraft will transport one science team member from WAIS Divide Camp to McMurdo Station.
- Week ending 20 January: LC-130 or Kenn Borek aircraft will transport one science team member from McMurdo Station to WAIS Divide Camp.
- Week ending 27 January: LC-130 or Kenn Borek aircraft will transport one science team member from WAIS Divide Camp to McMurdo.

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 the Monday and week ending on the Saturday.*

Airborne Research

No support requested.

Helicopter

No support requested.

Icebreaker

No support requested.

Mechanical Equipment Center (MEC)

Equipment	Quantity	Dedicated/Pool	Comments	Dates
<u>Snowmobiles</u>				
* Snowmobile, Heavy Duty, 2	1	P	ALP I Provided by WAIS D Camp	11/29 - 12/7

The items indicated with an asterisk have been identified as critical equipment to be tracked by RPS for our performance measures. This does not mean that other items are not important to your project; RPS will provide all equipment listed above.

Heavy Equipment and Explosives

No support requested.

Closeout Procedures

Principal Investigators' responsibilities:

- At least two weeks before departure ensure that the field team has submitted redeployment forms to the Chalet staff. The preferred approach is to submit the forms upon arrival and update it later.

- At least two weeks before departure, please confirm with the Crary Lab Staff that all individuals handcarrying and shipping samples via New Zealand have the appropriate MAF permits. This does not pertain to samples traveling on the vessel.
- Ensure that all wastes are packaged and labeled according to USAP procedures.
- Appoint a field team member to complete a final checkout for the group. RPSC will provide a checklist that ensures all procedures are understood and followed, including equipment return to the Berg Field Center, the Mechanical Equipment Center and the Crary Laboratory.
- Ensure that all original customs forms authorizing handcarry of technical equipment through New Zealand are returned to RPSC's Travel Supervisor after returning to the United States.

Attached Information and Tables

Grantee Arrival Checklist

Berg Field Center Allocation Report

Reports for Laboratory Materials and Supplies; Procurement, Inventory Items, Basic Stocked Supplies

GRANTEE ARRIVAL CHECKLIST

TEAM REQUIREMENTS	PLANNING SUBJECT	ACTIVITY DESCRIPTION	ESTIMATED TIME	DEPARTMENT CONTACT	EXT	COMPLETED
X	Accept Cargo	Locate and unpack the cargo that your team sent to McMurdo from your home institution. Grantee cargo and lab allocated equipment can be retrieved through the Crary Lab Stockroom.	Variable as to cargo requirements.	Sally Moore <i>Crary Lab Materials Senior</i>	4192	
	Science Construction Materials	Meet with Science Construction Coordinator to discuss construction needs.	15 min - 1 hour	<i>Science Construction Coordinator.</i>	2236	
X	Computer Equipment	Finalize computer support needs. Check laptops for current virus signatures.	15 min to 1 hour	Karen Joyce <i>Computer Services Crary Laboratory</i>	4177	
X	Pre-Field Communications Briefing	Before receiving communications equipment (radios and/or Iridium units) meet with Mac Ops Coordinator to receive communications briefing, establish check-in schedule, and review radio protocol.	30 –45 min— MacOps	Mary Rubarsky <i>MacOps Coordinator</i>	2821	
X	Communications Equipment Issue	After meeting with Mac Ops Coordinator (see above) make an appointment for the issue of communications equipment for the IT Communications Shop.	30 min – 1 hour	Bill Nesbit <i>IT Communications Supervisor</i>	2796	
X	Lab Space Allocation & Permits	Meet with the Crary Lab Staff to locate your allocated lab and office space and lab orientation. Confirm with Crary Lab Staff that MAF permits are on file for every individual transporting samples through or into New Zealand. Check permit accuracy and inclusion of all sample types.	25 min.	Cara Sucher <i>Crary Lab Manager</i>	4169	
	Meet with Diving Supervisor	Meet to discuss procedures and emergency response. Conduct check-out dive.	1/2 day	Rob Robbins <i>Scientific Diving Supervisor, Dive Services</i>	2354	
X	Accept Field Equipment	Visit the BFC and locate cage space. Look over equipment to ensure it will be functional for field needs.	1/2 - 2 days	Rachel Murray <i>Supervisor, Berg Field Center</i>	2348	
	Organize Field Food	Make an appointment at the BFC Food Room to discuss the process of menu planning, become familiar with the inventory and the barcode scanner, and make arrangements to pull and pack food for your stay in the field.	Pre food pull: 15 min. Food Pull: 1/2 -1 day	Peggy Malloy <i>Assistant Supervisor, Food Room</i>	2461	
X	Collect Mechanical Equipment	Pick up and get basic instruction on mechanical equipment required. This will not include snowmachines.	1 hour	Randy Sliester <i>Supervisor, Mechanical Equipment Center</i>	2352	
X	Prepare Equipment for Transport	Any cargo that will be transported into the field via aircraft will need to be prepared for travel. The alternate transportation styles will have different requirements. Seek the assistance of the Department Contacts. REMEMBER: ALL HAZARDOUS CARGO NEEDS TO BE SPECIALLY PACKAGED!! AND CERTIFIED 2-3 DAYS BEFORE TRAVEL.	1/2-2 days to pack 3 days prior to travel 1/2-2 days to pack 2 days prior to travel	Julie Grundberg <i>Supervisor Fixed Wing</i> Keith DePew <i>USAP Cargo Supervisor</i> Liz Kauffman <i>Supervisor, Helicopter Ops</i>	2529 2546 2277	
X	Visit with Fixed Wing Coordinator	Meet with Coordinator to finalize and verify field plans.	30 minutes	Julie Grundberg <i>Supervisor Fixed Wing</i>	2529	
	Visit with Helicopter Coordinator	Meet with Coordinator to finalize and verify field plans.	30 minutes	Liz Kauffman <i>Supervisor, Helicopter Ops</i>	2277	
X	Training Course Depending upon prior experience and study area, some of the following courses must be taken. Refer to RSP for assignments.	Field Safety Training Courses: Snowcraft I: Snowcraft Refresher: Sea Ice: Sea Ice Refresher: GPS: Altitude Training: Helicopter Training: Mechanical Equipment Courses: Antarctic Driver's License Pisten Bully Driving Snowmobile Driving and Repair	 2 days, 1 overnight 1/2 day 1 day 1/2 day 3 hours 1 hour 1 hour 30 minutes 1-2 hours 1-2 hours	Pam Hill <i>Field Support Coordinator</i> Julie Bonneau <i>Asst. Supervisor, MEC</i> <i>Supervisor MEC</i>	2356 2352 2962	
		Weather Observation Course:	2-3 hours	Meteorology Manager <i>Mac Weather</i>	2523	
X	Waste Management	Learn how to sort your trash while in town and in the field. Required for all USAP personnel every season.	1 hour	Mark Furnish <i>Waste Operations Manager</i>	2041	
	Other					

BFC Field Equipment Allocation

Item Name	I477	UOI	Total Weight (lbs.)	Total Cube (cu.)
Drill, Cordless, Battery, 12V	1	ea	5.00	0.30
Wet Wipes	12	ea	0.24	0.24
Tent, S.D. Tiros AST*	2	ea	20.00	4.00
Chair, crazy creek	2	ea	2.00	2.00
Ensolite Pad, 1/2"x28"x84"	4	ea	20.00	4.00
Pile Liner	2	ea	8.00	2.00
Pillow, Camp	2	ea	1.00	0.60
Thermarest	2	ea	10.00	2.00
Cargo/Duffle Bag	4	ea	12.00	1.20
Sleep bag, Arctic Storm, Standard, 30x90, -50F*	1	ea	10.00	4.00
Sleep bag, Arctic Storm, Long, 45x 95, -50F*	1	ea	12.00	4.00
Thermos, 1 QT Nissan	2	ea	5.00	0.60
Thermos, 2 QT Nissan	2	ea	7.00	1.00
Water Bottle, 1 QT, Nalgene	2	ea	0.60	0.40
Water Bottle Warmer	2	ea	0.60	0.60
Broom, Kitchen	1	ea	2.30	2.00
Bucket, 5 Gal Plastic	1	ea	3.00	1.30
Hand Cleaner, H2O less, Purrell	4	ea	0.40	0.40
Soap, Liquid, anti-bacterial	4	ea	3.20	0.40
Ear plugs*	20	pr	2.00	2.00
Heat pack, Hand, by the pair	45	pr	4.50	0.00
Urine bottle, 32 oz.	4	ea	1.20	0.80
Sled, Banana	1	ea	36.00	3.00
Sled, Siglin, 12' x 32"	1	ea	62.00	6.00
Carabiner, Sledge, for sled use	2	ea	1.00	0.20
First aid kit, Individual/Personal*	1	ea	0.80	0.30
Carabiner, Non-locking, NON-climbing use	5	ea	0.50	0.50
Bungee Cord	5	ea	1.50	0.50
Cargo Strap	10	ea	25.00	3.00
Strap, Cam, webbing, any length	6	ea	6.00	0.60
Paracord, aka P-cord, standard	100	ft	10.00	0.00
Rope, Nylon, 1/4" (100'/spool)	100	ft	10.00	30.00
Rope, Nylon, 1/2", (600'/spool)	50	ft	15.00	15.00
Tool Kit (standard)*	1	kit	18.00	1.50

Item Name	I477	UOI	Total Weight (lbs.)	Total Cube (cu.)
Clamp - C, Small (-3")	4	ea	4.00	0.40
Saw, Hand	1	ea	1.50	0.50
Shovel, Grain	2	ea	10.00	6.00
Tape, Duct	2	ea	3.60	0.20
Tape, Electrical	2	ea	0.20	0.20
Tape, Strapping	6	ea	6.00	0.60
Battery, AA*	12	ea	1.20	0.00
Extension Cord, 25 ft	1	ea	3.00	0.50
Power Strip	2	ea	10.00	2.00
Bamboo, 6'8'	20	ea	20.00	2.00
Stuff Sac, Lg	2	ea	0.20	0.20
Stuff Sac, Med.	2	ea	0.20	0.20
Stuff Sac, Sm.	2	ea	0.20	0.20
Ziplock, 12"x12"	10	ea	1.00	1.00
GPS, Garmin, 12 XL*	1	ea	0.80	0.30
Survey Tape, FG, 100 M/300*	1	ea	2.80	0.50
Binocular*	1	ea	1.80	0.30
Thermometer, MIN/MAX*	2	ea	0.60	0.20
Bamboo, 12'w/Red Flag	6	ea	18.00	0.60
Mug, Insulated	2	ea	0.60	0.40
APPROXIMATE TOTAL SUM OF WEIGHT AND CUBE FOR I477			401.54 lbs.	110.74 cu.

* The items indicated by an asterisk have been identified as critical equipment to be tracked by RPS for our performance measures. This does not mean that the other items are not important to your project; RPS will provide all equipment listed above.

Laboratory Materials and Supplies

I-477-M / Basic Stocked Inventory				
Stock#	Category Name	Product Name	Total Qty	Units
D1234	Lab Markers	Black, extra fine	4	EA
D1305	Lab Markers	Black, fine	4	EA
D5512	Miscellaneous	Kimwipes, 12" x 12"	3	BOX
D4484	Tyvek Protective Clothing	Body suits, size x-large, order by each, 25EA/CS	4	EA

I-477-M / Issued from Inventory				
Stock #	Synonym	Description	Qty Issued	UOM
0011972	METHANOL	METHANOL/ OPTIMA GRADE/ 1 LITER PER BOTTLE	1	BO