

Please review all of the following information, including the gear allocations and field team members, to ensure accuracy. This plan is an agreement between VPR and your group, documenting the logistics support you will receive.

• Project Information •

Lead Principal Investigators	Roger Bales
Institute	University of California, Merced, Department of Engineering
Project Title / Grant #	Core Measurements at Summit, Greenland Environmental Observatory (0336450) <i>and</i> Science Coordination Office for Summit Greenland (0453758)
NSF Program and Manager	NSF/OPP RSL, Simon Stephenson
VPR Project Manager	Robin Abbott

• Logistics Summary •

0336450 This project will conduct a suite of year-round core measurements from 2003 through 2008. In addition to core measurements, staff will also carry out measurements initiated by up to 15-20 individual investigators, including a significant sampling campaign by NOAA.

Investigators from the project will travel to Summit annually to set-up, monitor, and repair experiments as well as to conduct on-site training of the science technicians.

In June 2004, two field team members assisted the Summit crew with laying out and marking the boundaries for the 'undisturbed, no traffic, and clean air sectors' with green-flagged bamboo.

In winter/spring of 2005 a NOAA representative spent several months at Summit conducting ozone experiments in response to unusually high levels of ozone depletion over the Arctic. The experiments include the launch of 20+ ozonesondes, an experiment that will be repeated during winter/spring of 2006.

In August 2005, two team members from University of California, Merced and three NOAA representative will travel to Summit for a single flight period. The objectives for this visit will be:

- 1) Discuss and review sampling protocols with the techs, check the condition of the labs, check the space allocation for sample and science gear storage
- 2) Work with Bjorn Johns and a UNAVCO technician to develop a topographic map and updated station layout
- 3) Show the science techs the locations for the new ATM line (coordinates will be left for them to install it at some point)
- 4) Go over the computer systems, review software needs, and prepare a backup disk - if possible, or get one created for the November flights.
- 5) One member from the NOAA team is planning on installing a met station.
- 6) Gather video footage for working with the San Francisco's Exploratorium and for potential use in a proposed kiosk to be developed with the Greenland Ministry of Science and the Danish Polar Center.
- 7) The UC Merced team will also give a GEOSummit presentation to the Greenland Technical Society in Nuuk prior to traveling to Summit.

VPR is responsible for hiring science technicians to support the sampling (along with NOAA technicians) and for providing the Summit infrastructure to support the work. This project combines fieldwork in support of the Summit Science Coordination Office grant, 0453758.

0453758 The Summit Science Coordination Office (SCO) was established to coordinate measurements between investigators and the sharing of facilities and personnel on-site, to provide scientific requirements to NSF, it's support contractor and European partners as the facility is developed, and to stimulate sharing of data among science projects.

In support of that goal, SCO members will conduct regular trips to Summit, often combined with already-planned fieldwork in support of other grants. VPR will work closely with the SCO in developing and implementing plans for Summit that meet the changing needs of the science community.

For the complete VPR online project record for this grant, including science objectives, go to:

http://www.vecopolar.com/arlss_reports/arlss_projectsdetail.asp?cbPropNum=0336450 or
http://www.vecopolar.com/arlss_reports/arlss_projectsdetail.asp?cbPropNum=0453758

• Outstanding Issues •

Issue	Responsibility	Date Completed
Review support plan for accuracy and distribute to all field team members	PI	
Obtain all necessary permits for fieldwork	PI	
Visit all hyperlinks and review all documents referred to in the support plan	Field Team Members	
Please note this important information for your field team: Bring 2 different forms of picture ID. Passports are now mandatory for entry into Greenland. Be sure to pack them!	Field Team Members	
Obtain low-sun angle photos of Summit Station for both the November and February Twin Otter flights. Someone at Summit would be tasked to take the photos as the Twin Otter flies in.	VPR	
Complete Critical Success Factors	PI	8/2/05
Provide updated sampling protocols document to VPR science technicians / management	Burkhart	
Provide guidance and answer questions regarding protocols and experiments as needed throughout the year	PIs	
Provide additional/support and space requests to VPR based on August site visit	PIs	
Coordinate shipping of 3 ea ice core boxes to Merced & DRI	VPR/PIs	

• Allocations & Services •

Allocations from Inventory

Quant/Unit	Item
4 ea	Sleep Kits – containing sleeping bag, liner, and pad will be provided due to the planned visit of one night only. This will save people needing to haul extra gear via Copenhagen.
4 ea	Arctic Oven Tents, 8 x 8, one per person, or else weatherport will be available
Misc	Clothing for Burkhart and Bales to save hauling extra gear through Copenhagen
1 ea	Wireless PC Access Card
122 ea	Bamboo, 8 ft long, for setting up new ATM line

Procurements

Item
Travel support for UNAVCO representatives to/from Greenland
Travel support for Bales/Burkhart Kangerlussuaq to Nuuk and return .

Other Services

Project Allocations	Comments
Year-round science technician support as needed to complete experiments identified in protocols document	Summer technician support provided by Katie Hess and NOAA technician Jason Seifert. Winter Phase I support provided by Kim Wolfe and Steve Munsell. Phase II and Phase III staffing underway, but one Phase II spot will be filled by NOAA's Emrys Hall.
Green House and science trench space as-needed to complete experiments identified in protocols document	Year-round sampling requirements take space priority in the Green House labs and in the science trench. All other projects are accommodated on a space-available basis and via provision of temporary space.

Year-round sample preparation and shipment/handling through Scotia	See cargo section
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Non-VPR Services

UNAVCO Support
Two UNAVCO representatives will conduct a topographic and site survey. Topographic data will be turned over to John Burkhart for analysis and plotting. Site survey data will be turned over to VPR for creation of updated Summit site maps, which will be distributed and posted on http://www.vecopolar.com upon completion.

• Location Information •

Please visit <http://www.vecopolar.com> and navigate to the Greenland menu for en route and location-specific Greenland information. Prior to deployment, your entire field team should be familiar with the content of the *Greenland Guide* and, if traveling to Summit, with the guidelines provided in the *Summit Users' Guide*. Both are available electronically via our web site's Greenland menu.

• Cargo and Customs •

Any summer cargo required for your project should have arrived in Scotia, NY by July 25th, must be entered into our online Cargo Tracking System, and must be properly registered with customs.

VPR is currently storing 3 boxes of frozen samples for DRI and UC Merced in Kangerlussuaq. They will fly south on a cold-deck flight on August 11th and will be sent on from Scotia to DRI per the Pls' instructions.

VPR will send emails to all researchers with winter projects regarding any schedules and instructions for Summit Twin Otter resupply and sample returns. *Tentative* winter flight dates are November 4th and 11th and February 10th and 17th.

- For the most current flight schedules got to <http://www.vecopolar.com> and navigate to Greenland > Calendars/Schedules.
- For Customs requirements refer to the *Greenland Guide*, available at <http://www.vecopolar.com> under Greenland.

• Summer Support Schedule •

Date	Location	Activity
3 Aug	USA > CPH	Flight from US to CPH for Bales, Burkhart
4 Aug	CPH > Kanger > Nuuk	Flights from CPH to Greenland and onto Nuuk for Bales, Burkhart
5 Aug	Nuuk	SCO meetings with Greenland Home Rule and Presentation to Greenland Technical Society
6 Aug & 7 Aug	Nuuk	Visit area meteorological stations
8 Aug	Nuuk > Kanger	Flight from Nuuk to Kangerlussuaq for Bales, Burkhart
8 Aug	NY > Kanger	Flight from NY to Greenland for Clarke, Hoffman, Hall, Johns
9 Aug	Kanger > Summit	Flight from Kanger to Summit Station entire team
9 Aug 05	Summit	Elevation Survey performed by UNAVCO starting 9 Aug, 2005
10/11 Aug	Summit > Kanger	Flight from Summit to Kanger for entire team
11 Aug	Kanger > NY	1 or 2 people return to the US on Rotator plane
12 Aug	Kanger > CPH	Bales departs via Copenhagen
13 Aug	Kanger > NY	Last day to depart back to NY

• Field Team Information •

Name	Location	Date In	Date Out	Email
Andrew Clarke	Kangerlussuaq	2/9/2005	5/7/2005	Andrew.Clarke@noaa.gov
Andrew Clarke	Summit	2/11/2005	5/5/2005	
Andrew Clarke	Kangerlussuaq	8/8/2005	8/13/2005	
Andrew Clarke	Summit	8/9/2005	8/11/2005	
Roger Bales	Kangerlussuaq	8/8/2005	8/12/2005	rbales@ucmerced.edu
Roger Bales	Nuuk	8/4/2005	8/8/2005	
Roger Bales	Summit	8/9/2005	8/10/2005	
John Burkhart	Kangerlussuaq	8/8/2005	8/13/2005	jburkhart@ucmerced.edu
John Burkhart	Nuuk	8/4/2005	8/8/2005	
John Burkhart	Summit	8/9/2005	8/10/2005	
Dave Hoffman	Kangerlussuaq	8/8/2005	8/11/2005	David.J.Hofmann@noaa.gov
Dave Hoffman	Summit	8/9/2005	8/10/2005	
Seifert, Jason	Kangerlussuaq	2/17/2005	2/23/2005	jason.seifert@noaa.gov
Seifert, Jason	Kangerlussuaq	5/1/2005	8/13/2005	
Seifert, Jason	Summit	5/03/2005	8/11/2005	
Hall, Emrys	Kangerlussuaq	8/8/2005	8/13/2005	
Hall, Emrys	Summit	8/9/2005	8/11/2005	
Hall, Emrys	Summit	11/4/2005	2/17/2006	<i>Tentative</i>
Johns, Bjorn	Kangerlussuaq	8/8/2005	8/13/2005	
Johns, Bjorn	Summit	8/9/2005	8/11/2005	
White, Seth	Kangerlussuaq	<i>already on-site</i>	8/13/2005	
White, Seth	Summit		8/11/2005	

• Project Contact Information •

Research Team

Role	Name	Email	Phone / Fax
Principal Investigator 0336450 and 0453758	Roger Bales	rbales@ucmerced.edu	209-724-4348/209-724-4459
NOAA representative 0336450	Andrew Clarke	Andrew.Clarke@noaa.gov	303-497-6655/
Collaborator 0336450	Joseph McConnell	jmconn@dri.edu	775-673-7348/775-673-7363
Collaborator 0453758	Jack Dibb	Jack.dibb@unh.edu	603-862-3063/603-862-2124
Field Coordinator 0336450 and 0453758	John Burkhart	jburkhart@ucmerced.edu	209-658-7142/209-724-4459

VPR Team Members

Contact for	Name	Email	Primary Phone(s)
Greenland operations	Robin Abbott	robin@polarfield.com	Denver: 303.748.8507 Greenland: 011.299.524218
Greenland operations	Mark Begnaud	mark@polarfield.com	Denver: 720.320.6160 Greenland : 011.299.524281
Summit Manager (current)	Kathy Young	Kathy.young@summitcamp.org	Summit: 321.953.9650
Denver operations	Jill Ferris	jill@polarfield.com	Denver: 720.320.6155
Scotia Operations & Customs	Earl Vaughn	earl.vaughn@nyscot.af.mil yprscotia@direcway.com	Scotia: 518.331.3103

VPR Offices

Denver	Kangerlussuaq	Scotia	Summit
VECO Polar Resources 8392 S. Continental Divide Rd. #104 Littleton, CO 80127-4268 Tel: 303.984.1450/1439 Fax: 303.984.1445	VECO Polar Resources Attn: Name of Employee/Researcher Postboks 1015 DK-3910 Kangerlussuaq, Greenland Tel: 011.299.841598 Fax: 011.299.841599	Earl Vaughn C/O 109 th Aerial Port Bldg. 20 Stratton Air Base Scotia, NY 12302-9752 Fax: 518.884.2904	VECO Polar Resources Attn: Name of Employee/Researcher Postboks 1015 DK-3910 Tel: 321.953.9650 Fax: 321.953.9651

Other

Organization	Internet	Phone
UNAVCO Bjorn Johns	bjorn@UNAVCO.org	303-497-8034

• Permitting •

Permits

Please refer to VPR's *Greenland Guide*, available at <http://www.vecopolar.com> under Greenland, for information about permits required to conduct fieldwork in Greenland.

• Critical Success Factors •

Please list the support factors that are most important for the success of your science. We track these factors in order to measure the success of VPR's support. Examples might be the availability of the helicopter or camp gear.

Factors	Benchmark
Greenhouse Gases / Maks Flasks	Weekly collection, safe storage and shipment of flasks
Ozone Sampler	Weekly calibrations, data downloaded and submitted every 12 days
Aethelometer	<i>No benchmark provided by PIs</i>
Radionuclides filter	Daily flow rate recording, filter change every 2 days, retro shipment of filters
Aerosol drum impactor	Monthly inspection of unit, inspection following outages, retro shipment
Surface snow samples	Samples collected semi-weekly, data sheets updated electronically, sample sheets uploaded/emailed to SCO weekly, safe/frozen retro of samples
Surface snow ICP-MS samples	Samples collected weekly, data sheets electronically updated, sample sheets uploaded/emailed weekly to SCO, safe/frozen retro of samples
One meter pit sampling	Samples collected monthly, accurate depth recording of samples (note any errors or offsets), data sheets electronically updated, sample sheets uploaded/emailed monthly to SCO, safe/frozen retro of samples
String pit	Strings placed monthly, accurate record of depth, string color, etc., data sheets kept up-to-date and emailed monthly to SCO
Bamboo forest	Observations made weekly, data sheets maintained electronically and uploaded/emailed to SCO monthly
ATM accumulation line	Observations made bi-weekly, data sheets maintained electronically and uploaded/emailed to SCO monthly
ETH	Measurements and data downloads per protocols

Weekly Reporting	Weekly reporting sheets maintained, data emailed/uploaded as scheduled, communication between field technicians, SCO maintained
General	<ul style="list-style-type: none"> - Camp pollution kept to a minimum and vehicle use or poor weather conditions impacting clean air sites recorded and noted in weekly report - Power supply maintained and failures noted, instruments checked following power failure or surge

• Government Performance and Reporting Act of 1993 (GPRA) •

NSF/OPP requires your help in complying with the Government Performance and Reporting Act of 1993 (GPRA). One measure of VPR's performance is a "facility-performance metric" which counts the number of productive days your project has in the field while relying on VPR facilities or support. Please keep track of any "lost days" and report these to us at the end of the season.