

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 Investigator	Eric Steig
Institute	University of Washington, Quaternary Research Center
Project Title / Grant #	Isotopic composition of HNO ₃ and NO _x at Summit Greenland (0454803)
NSF Program and Manager	NSF/OPP ANS, Jane Dionne
VPR Project Manager	Robin Abbott

• Logistics Summary •

Over the course of the next 3 years, this project plans four trips to Summit, Greenland to characterize variability of isotopes in atmospheric NO₂, NO, HNO₃, and HNO₃ in snow Summit.

A team of researchers will travel to Summit in July 2005, February or March and July 2006, and July 2007, where they will conduct continuous atmospheric sampling and will obtain snow and firn samples. During the first summer the team will test their field-sampling equipment and optimize collection protocols. They also plan to document long-term variability in isotope concentrations in 2005 by taking a new 100m core with support from the Ice Coring and Drilling Services Office at University of Wisconsin.

This project will also have access to the clean lab area and millipore water. Atmospheric sampling equipment (aerosol filters and mist chambers) will be set up above the science trench. A data logger in the science trench will be used to record flow rates and temperatures.

VPR will support the team via infrastructure at Summit. In addition, VPR science technicians will collect fresh snow samples when no team members are on-Station.

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=0454803

• Outstanding Issues •

Issue	Responsibility	Date Completed
Review support plan for accuracy and distribute to all field team members	PI	June 6, 2005
Obtain all necessary permits for fieldwork	PI	
Visit all hyperlinks and review all documents referred to in the support plan	Field Team Members	
Contact the GEOSummit Science Coordination Office (SCO) mailto:sco@geosummit.org regarding your project's plans for the season	PI	June 6, 2005
Medical Clearance completed 8-6 weeks before desired deployment date	Field Team Members	June 6, 2005
<i>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!</i>	Field Team Members	June 6, 2005

Complete Critical Success Factors	PI	June 6, 2005
Identify team members including SS#, PP#, PP expiration date, place of birth, date of birth.	PI	June 2, 2005

• Allocations & Services •

Allocations from Inventory - Please list items below that you would like to see provided by VPR.

Quant/Unit	Item
1 ea requested	Arctic Oven tents 8'x'8' for sleeping (see note)
2 ea requested	Thermarests or pads for sleeping in the tents
200-300 psi	Helium, will be provided from Cort Anastasio's helium allocation
Access to DI water, counter space, and the MilliQ system	There is one MilliQ system, drying hood, and limited counter space that can be used on a shared basis.
2 ea	Wireless PC access cards

-Note: Due to the high population at Summit during this time, people may be required to share a tent.

Non-VPR Services

ICDS Support
ICDS will support the project by drilling a 100-meter core using their 4-inch, already at Summit this summer.
VPR has flagged the site for the hole 5.5km north of the DISC drill pad which puts it 5 km north of the skiway, flagged every 0.5 KM there after. - DISC site = N72' 34.972 W038' 27.291 - Steig site = N72' 37.944 W038' 26.944
ICDS will wait to drill the hole until the field team arrives. If time allows however, the drilling equipment will be set up on site, ready to begin drilling upon arrival of the field team.
One ICDS person will remain at Summit until the end of July to complete the drilling along with the help of the field team members.
Tony Wendricks of ICDS is the point of contact for any drilling supplies or equipment including ice core boxes, lay flat tubing, Johnny blue ice. See Project Contacts section for contact info

Other VPR Services

Project Allocations	Comments
<ul style="list-style-type: none"> - VPR will store approximately 20-25 boxes of frozen samples in Kangerlussuaq before they are shipped back on the 109th Air Guard. - Frozen samples shipped from Greenland will be coordinated with the Cargo Coordinator in Scotia and placed into a freezer truck upon their Aug 11 arrival. 	<ul style="list-style-type: none"> - The PI will arrange to have a freezer truck meet the airplane in New York for immediate pick-up and shipment to Seattle. - Two field team members will assist with moving the boxes into the freezer truck. - All arrangements regarding trucking the ice cores back to Seattle are the PI's responsibility.
VPR will fabricate 3 ea insulated boxes, 30*16*24 inches.	Boxes were completed by June 27 th in Kangerlussuaq and will be sent to Summit
12 each, 1-1/2" x 10' long pieces of EMT conduit with 50 each matching 2 hole conduit straps and U-bolt for field installation.	Assistance from the field construction crew will be available as needed.
Power required in science trench: two outlets: 1) 110V, 10 W for datalogger, 2) 110V for laptop computer	

<p>Power required above science trench for air sampling equipment: 100V outlets for three 750 W vacuum pumps; three 60 W light bulbs; and three 150 W heat tapes</p>	
<p>Access to Greenhouse clean room and science trench.</p>	<p>Three science projects (GA Tech, Swiss ETH, Univ of Wash) and the station science techs will share the small Greenhouse clean room during your deployment. Upon the arrival of your team member, a 'facilities use schedule' will be worked out. We need to have everyone's cooperation to ensure that all projects can meet their projected goals. Room is available in the science trench and VPR is encouraging teams to work there if possible. The average trench temperature is ~40F.</p>

• 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 •

All cargo required for your project should arrive in Scotia, NY no later than 2 weeks prior to the desired northbound Air National Guard (ANG) flight, must be entered into our online Cargo Tracking System, and must be properly registered with customs. All Customs Registration paperwork will be filled out by the PI and sent to the Cargo Coordinator in NY to insure easy entry back into the USA.

- For the most current ANG flight schedule go to <http://www.vecopolar.com> and navigate to Greenland > Calendars/Schedules.
- Customs instructions are available on our website at <http://www.vecopolar.com> (go to Greenland > Customs)
- For Customs requirements please refer to the *Greenland Guide*, also available at <http://www.vecopolar.com> under Greenland.

Cargo List

Items	Weight/Cube
10 packages shipped to NY which include the items listed below:	
- Aluminum case with vacuum pumps and tubing	200 lbs/24 ft ³
- Aluminum case with vacuum pumps and glassware	200 lbs/24 ft ³
- Aluminum case with clothing and sleeping bags	100 lbs/24 ft ³
- Ski bag	10 lbs/2 ft ³
- One package is "Hazardous" containing liquid triethanolamine and solid chromium oxide. Both are UNREGULATED items, and are in their original shipping containers. (they are an eye irritant, but not otherwise hazardous) MSDS documents will be inside the box as well as sent by UPS to Earl Vaughn in NY.	
1 or 2 boxes to be handcarried and put on baggage pallet	

• Support Schedule •

Date	Location	Activity
10 July	Scotia	Team members arrive in NY (Steig, Hastings, Jarvis, Kunasek)
11 July	Kangerlussuaq	Arrive in Greenland
12 July	Summit	Team members arrive at Summit
12-14 July	Summit	ICDS will be there to drill your 100 meter core
28 July	Summit	Team members depart Summit (Steig, Hastings, Jarvis, Kunasek)
30 July	Kangerlussuaq	Depart Greenland (Steig, Hastings)
11 Aug	Kangerlussuaq	Depart Greenland (Kunasek, Jarvis) along with ice core samples

• Field Team Information •

Name	Location	Date In	Date Out	Email
Hastings, Meredith	Kangerlussuaq	7/11/2005	7/30/2005	
Hastings, Meredith	Summit	7/12/2005	7/28/2005	mhasting@atmos.washington.edu
Steig, Eric	Kangerlussuaq	7/11/2005	7/30/2005	
Steig, Eric	Summit	7/12/2005	7/28/2005	steig@ess.washington.edu
Kunasek, Shelley	Kangerlussuaq	7/11/2005	7/30/2005	
Kunasek, Shelley	Summit	7/12/2005	7/28/2005	shelfish@u.washington.edu
Jarvis, Julia	Kangerlussuaq	7/11/2005	7/30/2005	
Jarvis, Julia	Summit	7/12/2005	7/28/2005	jjarvis@u.washington.edu

• Project Contact Information •

Research Team

Role	Name	Email	Phone / Fax
Principal Investigator	Dr. Eric Steig	steig@ess.washington.edu	206-685-3715/206-543-0489
Co-PI	Dr. Meredith Hastings	mhasting@atmos.washington.edu	206-543-4596/206-543-0308

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
Medical	Jason Buenning	jason@polarfield.com	Denver: 303.638.6669
Denver operations	Jill Ferris	jill@polarfield.com	Denver: 720.320.6155
Scotia Operations & Customs	Earl Vaughn	earl.vaughn@nyscot.ang.af.mil vprscotia@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
Summit Science Coordination Office	http://www.geosummit.org sco@geosummit.org	N/A
ICDS – Tony Wendricks	tonyw@ssec.wisc.edu	608.263.6755

• Safety, and Health •

Medical Clearance

Arctic Program participants traveling into the Greenland field are generally required to pass a National Science Foundation (NSF) mandated physical exam. All field team members should plan to complete their medical clearance process 8-6 weeks prior to their travel to Greenland. For more information refer to VPR’s *Greenland Guide*, available at <http://www.vecopolar.com> under 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
Our number one priority this season is the collection of an ice core, and keeping it frozen all the way back to Seattle.
Help with set-up of sampling equipment at the science trench (power requirements).
It will be important to have accurate logs of camp activities (e.g. use of snow cats) that produce NO _x emissions, and good coordination with us on limiting these activities.
It is critical that the dionized/millipore water system be in good working order.

• 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.