

Please review all of the following information, including the gear allocations and field team information, to ensure accuracy. This plan is an agreement between CH2M HILL Polar Services (CPS) and your group, documenting the logistics support you will receive.

PROJECT INFORMATION

Lead Principal Investigator	Sivaprasad Gogineni
Institute	University of Kansas, Electrical Engineering and Computer Science
Project Title / Grant #	Center for Remote Sensing of Ice Sheets (CReSIS) (0424589)
NSF Program and Manager	NSFOD\OPP\ANT\AG, Dr. Julie Palais and Dr. Martin Jefferies
PFS Project Manager	Robin Abbott

LOGISTICS SUMMARY

The goal of this multidisciplinary, multi-institutional effort is to characterize the base of Greenland's ice sheet and the englacial environment in two areas: the region where the supraglacial lakes form and drain to the bed through moulins and the region where Jakobshavn Glacier tributaries come together to form the main ice stream channel. As lead institution, the University of Kansas (KU) will provide overall direction and management. The Ohio State University (Co-PI Kenneth Jezek, institutional lead), Pennsylvania State University (Co-PI Richard Alley, institutional lead), University of Maine (Terence Hughes, institutional lead), Elizabeth City State University (Linda Hayden, institutional lead) and Haskell Indian Nations University (Carol Bowen, institutional lead) are key research partners as well.

The research, which is planned for 2007 – 2010, involves four basic efforts: airborne and surface-based radar surveys at various scales, seismic surveys, 150-meter ice core samples, and GPS deployments. The researchers plan to work from Ilulissat (for the aerial work) and at two field sites, one near Swiss Camp and another at a glacier tributary near Crawford Point (for the ground-based research).

2010 efforts involve two Greenlandic deployments supporting seismic work. The team will base out of Ilulissat for 10 days in May and again for about 1 week in August. For the May trip, three researchers will install ~20 small GPS receivers. The first site will be sited on rock; the remaining will be on the ice. These installations will form a line from the rock to the supraglacial lakes, and then will ring around the lakes. The team will have three days of close support: the helicopter will remain with them while they spend about 30 minutes installing each instrument before moving to the next site. They also will spend about three days working in the field on day trips from Ilulissat; the helicopter will drop them off in the morning and pick them up in the late afternoon. The day trips will allow the team to perform an active seismic experiment to examine the nature of the base of the glacier in the area around the lake.

The team will return in August to remove all the GPS receivers. These will be returned to New York via Kangerlussuaq.

For 2010, CPS will arrange helicopter support and hotel accommodations in Ilulissat, AirGL commercial tickets, ANG coordination and KISS user days, fuel, some materials, gear from inventory and safety equipment. All other logistics will be arranged by the PI/project and paid from the grant.

For the complete CPS online project record for this grant, including science objectives, go to:
http://www.polar.ch2m.com/arlss_reports/arlss_projectsdetail.asp?cbPropNum=0424589

For up-to-date information on the project's schedule, please view the online Greenland calendar (<http://www.polar.ch2m.com/> > Greenland > Calendars/Schedules).

OUTSTANDING ACTIONS AND NOTES

Issue	Responsibility	Date Due	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	Entire Field Team		
Note: Passports are required for Air National Guard and international travel. Also, please bring TWO copies of your passport to Greenland with you.	Entire field team		

ALLOCATIONS AND SERVICES

Allocations from Inventory

Quant/Unit	Item
1 ea	Kifaru sled – located in the container in Ilulissat
4 ea	Propane cylinders – small size
1 ea	Sledge hammer
2 ea	Ice axe
3 ea	Thermos
1 ea	1kw Generator
2 ea	Survival bag(s) to accommodate 3 people
1 ea	Iridium Phone – picked up in Kangerlussuaq
1 ea	PLB – SAR beacon – picked up in Kangerlussuaq
1 ea	Medical Kit

For more information on satellite phones, radios, manuals and other field communications support, please visit the CPS communications Web site at <http://www.polar.ch2m.com/>.

Other Services

Service	Comments
109 th Clearances arranged for flights to/from GL	Two deployments, one in May and in August
KISS accommodations when in Kangerlussuaq	
Air GL commercial flights booked to/from Ilulissat	
Hotel Hvide Falk rooms booked (1 single; 1 double)	
Air GL Helicopter Charters arranged and booked	
Cargo shipment forwarded to Ilulissat	

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.

For the most current ANG flight schedule go to <http://www.polar.ch2m.com/> and navigate to Greenland > Calendars/Schedules.

The following is our current understanding of your overall cargo requirements:

Cargo List

Items	Comment
One wooden skid, shrink-wrapped, containing 29 miscellaneous pieces	Already forwarded onto Ilulissat

SUPPORT SCHEDULE

Approx Date	Location	Activity
10 May	NY > Kanger	109 th flight to Greenland (Don Voigt, Peter Burkett, Randy Justin)
11 May	Kanger > Ilulissat	Air GL580- commercial flight departing SFJ at 11:10
13 May	Helicopter Close support	Installation of 10 units – helicopter available for the day
15 May	Helicopter Close support	Installation of 10 units - helicopter available for the day
17 May	Drop off 3 pax in AM	Pick up at the end of the day
18 May	Drop off 3 pax in AM	Pick up at the end of the day
19 May	Drop off 3 pax in AM	Pick up at the end of the day
20 May	Helicopter Close support	Installation of remaining units - helicopter available for the day
21 May	Ilulissat > Kanger	Air GL571- commercial flight arriving SFJ at 10:20
22 May	Kanger > NY	109 th flight back to US
12 August	NY > Kanger	109 th flight to Greenland (TBA; TBA)
14 August	Kanger > Ilulissat	AirGL512- commercial flight departing SFJ at 13:20
16 August	Helicopter Close support	Full day to retrieve the units
17 August	Helicopter Close support	Full day to retrieve the units
21 August	Helicopter Close support	Full day to retrieve the units
22 August	Ilulissat > Kanger	AirGL501- commercial flight arriving SFJ at 9:45
19 & 22 August	Kanger > NY	109 th flight back to US if team finishes after 2 days of helicopter support
24 or 26 Aug	Kanger > NY	109 th flight back to US if team needs 3 days helicopter support

For the most up-to-date information on the project’s schedule, please view the online Greenland calendar (<http://www.polar.ch2m.com/> > Greenland > Calendars/Schedules).

PROJECT CONTACT INFORMATION

Field Team

Name	Dates	Email
Donald Voigt	10 – 22 May	dev2_at_psu.edu
Randy Justin	10 - 22 May	
Peter Burkett	10 – 22 May	
TBA	12 - 24 Aug	May leave earlier if helicopter support is complete during the first two days.
TBA	12 – 24 Aug	May leave earlier if helicopter support is complete during the first two days.

Research Team

Role	Name	Email	Phone / Fax
Co-PI	Richard Alley	ralley_at_essc.psu.edu	814 863.1700 /814 865-3191
Co-PI	Sridhar Anandakrishnan	sak_at_essc.psu.edu	814 863.6742 /814 863.7823
Co-PI	David Braaten	braaten_at_ku.edu	785 864.3801 /785 864.5262
Principal Investigator	Sivaprasad Gogineni	gogineni_at_crisis.ku.edu	785 8647734 /785 864.7753
Field Coordinator	Donald Voigt	dev2_at_psu.edu	814-865-3732
Co-PI	Kenneth Jezek	jezek.1_at_osu.edu	614 292.7973 /614 292.4697
Co-PI	Ellen Mosley-Thompson	thompson.4_at_osu.edu	614 292.6662 /
Co-PI	Glenn Prescott	prescott_at_eecs.ku.edu	785 864.8804 /

CPS Team Members

Contact for	Name	Email	Primary Phone
Greenland science planning & support	Susan Zager	Susan at polarfield.com	Denver: 720.320.6159
Greenland science planning & support	Robin Abbott	Robin at polarfield.com	Denver: 303.748.8507
Kangerlussuaq base operations	Kathy Young	Kathy at polarfield.com	Denver: 720.320.6160 Greenland: 011.299.524218
Scotia (Stratton Air Base) operations & customs	Earl Vaughn	Earl Vaughn at gmail.com	Scotia cell: 303.552.6072
Sat phones & comms	Roy Stehle	Roy.Stehle at sri.com	Menlo Park: 650.859.2552
Remote Medical (kits & service)	Kyli Olson	Kyli at polarfield.com	Denver: 303.489.2151

CPS Offices

Denver	Kangerlussuaq	Scotia
Polar Field Services 8110 Shaffer Parkway Suite 150 Littleton, CO 80127 Tel: 303.984.1450/1439 Fax: 303.984.1445	CH2M HILL Polar Services 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 Tel: 518.344.2635 Cell: 518.331.3103 Fax: 518.344.2537

Other

Organization	Internet	Phone
Medical Advisory Service (MAS) (see below for Remote Telemed #)	http://www.medaire.com/corp_medlink.html	Office: 480.333.3771

SAFETY, ENVIRONMENT, HEALTH and PERMITS

Effective January 1, 2010 the Government of Greenland assumed responsibility for the permitting process for research in Greenland. All science teams planning to conduct research in Greenland must complete an **annual application** in order to obtain approval from the Government of Greenland. The application forms are available from the Department of Domestic Affairs, Nature and Environment at <http://www.nanoq.gl/expeditions> or by sending an email to [ekspeditioner at gh.gl](mailto:ekspeditioner@gh.gl). Applications are submitted directly through the Department of Domestic Affairs, Nature and Environment. Be advised that a new fee of 4000 DKK has been put in place for permits. For assistance with the application process, contact:

Martin Schiøtz
 Head of Section
 Section of Nature
 Department of Domestic Affairs, Nature and Environment P.O. Box 1614
 3900 Nuuk
 Greenland
 e-mail: [ekspeditioner at gh.gl](mailto:ekspeditioner@gh.gl)

Medical Advisory Service (MAS) Support

If you need medical advice/assistance, do not hesitate to contact Medical Advisory Service (MAS) using the card included with the medical kit or the information below. Be sure that each team member knows where the kit is located and understands how to use the MAS service in the field. For further information on MAS, please visit our Web site <http://www.polar.ch2m.com/> and navigate to Medical>Remote Medical Services/Kits.

MAS 24/7 Telemed Service

Worldwide Phone: 1.480.333.3876
 Fax: 1.480.333.3821
 Member ID: CH2M HILL Polar Services

RISK ASSESSMENT

See Appendix for Risk Factors and Mitigation.

CRITICAL SUCCESS FACTORS

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

Factors
Processing and shipment to Kanger of project equipment delivered to Scotia.
Delivery of equipment to Iullissat. This includes both project equipment that was shipped to Scotia and equipment generated by Polar Services as requested in the project plan.
Arrangement of helicopter time as laid out in the project plan.
Travel of team members to Iullissat and back to Kanger and travel to and from Scotia as outlined in the project plan.
Return of project equipment to Kanger in August after it is retrieved from the field.
Return of project equipment to Scotia and shipment to POO.

GOVERNMENT AND PERFORMANCE 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 CPS' performance is a "facility-performance metric" which counts the number of productive days your project has in the field while relying on CPS facilities or support. Please keep track of any "lost days" and report these to us at the end of the season.

APPENDIX

RISK FACTORS and MITIGATION

Factor	Mitigation and Control
Generator	-Attend generator training/AHA
Heavy lifting/body strains and sprains	-Use proper lifting techniques
Helicopter Travel and working around	-Participate in helicopter training -Have a SAR plan in place -AHA working around aircraft -Carry survival bags on the aircraft if doing day trips, or if multiple put in flights insure people travel with survival items from camp supplies