

PROJECT INFORMATION

Lead Principal Investigator	Laurence Smith
Institute	University of California, Los Angeles, Department of Geography
Project Title / Grant #	Understanding Ice-Sheet Elevation Change: How Much Goes to the Ocean? (NASASmith)
NSF Program and Manager	Other Agency- NASA, Dr. Thomas Wagner
PFS Project Manager	Susan Zager

LOGISTICS SUMMARY

With this three-year NASA-funded project (which includes two years of field work), the PI will conduct hydrographic research in Greenland to assess the prevalence of snow densification across the Greenland Ice Sheet and its importance to estimates of global sea-level rise.

In 2007, a research team traveled to Kangerlussuaq, Greenland, and installed two trial hydrometric instruments for proof of concept studies near Kangerlussuaq. These instruments upload hydrologic water-level data each day via satellite modem. In the summer of 2008, a team of 3 returned and installed several more instruments; they also conducted ground measurements of river discharge for instrument calibration. In 2009, in addition to 2008 activities, the team collected ground truth data for validation of air-borne interferometric synthetic aperture radar data.

In 2010, two teams of two will make trips to Kangerlussuaq, for about one week each trip, to continue the work. The first will occur in early June; the second in late August. During each field campaign a research team of two or three people will be deployed. The team will tent-camp at the main study site and access other study sites and Kangerlussuaq via truck. All members will travel to/from Kangerlussuaq via the ANG.

CPS will provide Kangerlussuaq user days, a rental truck, camp, communications, and safety gear and ANG air support from Albany, NY, to Kangerlussuaq. NASA will reimburse the NSF via interagency funds transfer.

All other support will be arranged by the PI 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=NASASmith

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		
Provide cost estimate for interagency transfer			
Provide end of season actual costs	CPS		
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		
Complete Critical Success Factors	PI		

ALLOCATIONS AND SERVICES

Allocations from Inventory

Quant/Unit	Item
1	Iridium phone
1	1 kW generator
1	Mogas
2	Tents
2	Thermarests
1	Cook stove + matches and fuel
1	Kitchen box including pots, utensils, plates, cups, cleaning items
2	Camp chairs – folding chairs
1	Medical kit
4	5 gallon water jugs
1	pyramid tent for cooking, Mt. Hardware, no bottom, used last year
2	life jackets
2	Ground pads

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
Truck rental	03 Jun to 10 Jun
Truck rental	12 Aug to 21 Aug
Warehouse space and access to tools	For pre and post field work activities.

LOCATION INFORMATION

Please visit <http://www.polar.ch2m.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*. 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.

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

If you are a **new user** requiring access to the Cargo Tracking System, contact [Jason Buening](#).

If you need **technical support** with the Cargo Tracking System, contact [Mike Dover](#).

Customs instructions are available on our Web site at <http://www.polar.ch2m.com/> (go to Greenland > Customs). More information is available via the *Greenland Guide*, under Greenland on the CPS site.

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

Items	Weight/Cube
Camp and science equipment, minimal.	200 lbs, 1 pallet

SUPPORT SCHEDULE

Approx Date	Location	Activity
02 Jun 10	NY – SFJ	Rennermalm, Hagedorn to Kanger via 109 th . Overnight in KISS.
03 Jun 10	SFJ – field	Prepare camping equipment; Rennermalm, Hagedorn to field site near Kanger via pickup.
08 Jun	Field – SFJ	Rennermalm, Hagedorn return to Kanger. Overnight in KISS.
09 Jun 10	SFJ	Clean up and storage of science and camping equipment. Overnight in KISS.
10 Jun 10	SFJ – NY	Rennermalm, Hagedorn to NY via 109 th
12 Aug 10	NY – SFJ	Rennermalm, Chu to Kanger via 109 th . Overnight in KISS
13 Aug 10	SFJ – field	Prepare camping equipment; Rennermalm, Chu to field site near Kanger via pickup.
20 Aug 10	Field – SFJ	Rennermalm, Chu return to Kanger. Overnight in KISS
21 Aug 10	SFJ	Clean up and prep for shipment of science and camping equipment. Overnight in KISS.
22 Aug 10	SFJ – NY	Rennermalm, Chu to NY via 109 th

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).

FIELD TEAM INFORMATION

Name	Email
Rennermalm, Asa	arennerm at rci.rutgers.edu
Chu, Vena	
Hagedorn, Birgit	hagedorn at u.washington.edu

PROJECT CONTACT INFORMATION

Research Team

Role	Name	Email	Phone / Fax
Collaborator	Rick Forster	rick.forster at geog.utah.edu	801 581.3611 /801 581.8219
Collaborator	Niels Reeh	nr at space.dtu.dk	
Principal Investigator	Laurence Smith	lsmith at geog.ucla.edu	310 825.3154 /310 206.5976

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: 518.605.0979
Sat phones & comms	Roy Stehle	Roy.Stehle at sri.com	Menlo Park: 650.859.2552
Remote Medical (kits & service) and Medical/Dental Clearance (PQ)	Robbie Score	Robbie at polarfield.com	Denver: 303.906.0093

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: 518.605.0979 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
Truck rental
Availability of camping gear
Access to warehouse/tools

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

RISK FACTORS and MITIGATION

Factor	Mitigation and Control
Communications	<ul style="list-style-type: none"> -Carry the appropriate communications system (satellite phone) -Assure your phone and/or radio is fully charged before going out and carry a spare battery.
Emergency Plan	<ul style="list-style-type: none"> -Compile a list of emergency contacts for your field team and share it with critical participants including your home institution and CPS. -Share your satellite phone number as a means for others to contact you.
Generator	<ul style="list-style-type: none"> -Attend generator training -Review current AHA (Activity Hazard Analysis)
Heavy lifting/body strains and sprains	<ul style="list-style-type: none"> -Use proper lifting techniques
Remote Camp	<ul style="list-style-type: none"> -Have a remote medical call in service -Have a SAR plan in place -Have a First Aid kit available -Have a communication/ check-out/check-in plan in place -Maintain back-up equipment and supplies in case of emergency (comms, generators, tents, food) -Maintian an emergency contact list, include all applicable agencies, field team members, provide camp location and description to local SAR groups
Truck Travel	<ul style="list-style-type: none"> -Participate in truck training -Do not ride in the bed of the truck -Insure the truck has spare tire and jack for extended trips -Carry survival gear and warm clothes for extended trips -Carry a radio for extended trips
Water – Availability, Potability	<ul style="list-style-type: none"> -Investigate the use of a filtration system and acquire one if necessary -Carry water in