

PROJECT INFORMATION

Lead Principal Investigator	Jason Box
Institute	Ohio State University, Byrd Polar Research Center
Project Title / Grant #	Greenland glacier discharge variability from automated ground-based imaging (NASAIceCam)
NSF Program and Manager	Other Agency - NASA, Dr. Thomas Wagner
PFS Project Manager	Susan Zager

LOGISTICS SUMMARY

This project's researchers track glacier motion in Greenland via a network of automatic cameras strategically placed around the ice sheet. During trips to Greenland, in 2007-2010, project teams will conduct maintenance on existing automatic cameras and deploy additional ones.

In 2007, researchers installed 12 automatic cameras in Greenland, basing at Kangerlussuaq, Ilulissat and Uummannaq, and using air support to access glacier sites. In 2008, teams based from the same locations for maintenance of existing stations and installations of new ones, making two trips to Greenland, one in May and one in July. During two trips to Greenland in 2009—in mid-May and August--project researchers (Box and Howat) will conduct maintenance on existing automatic cameras and deploy newly-developed, "disposable" GPS receivers.

A team of two will travel to Greenland again in 2010, flying into Kangerlussuaq via the ANG in early June. They will visit glaciers near Ilulissat and Uummannaq via helicopter, travelling to these communities via Air Greenland commercial air. The team will first base from Ilulissat for several days. They will travel to the Jakobshavn Glacier and Sermeq Avannarleq on day trips. When this work is completed, Balog will return to Kangerlussuaq and depart Greenland via commercial air while LeWinter travels to Uummannaq. There, he will make helicopter-supported day trips to installations at Store, Rink, Umiamik glaciers and Torsukatavannarleq. When the work is finished several days later, the researcher will return to Kangerlussuaq and spend a few days visiting local installations, based from the KISS. He will then depart Greenland via commercial air.

CPS support includes ANG air travel coordination, helicopter charters, Kangerlussuaq lodging, and freight within Greenland for the IceCam project. These funds will be recouped via interagency funds transfer between NASA and NSF. The researchers will pay for commercial tickets within Greenland and lodging outside Kangerlussuaq themselves.

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=NASAIceCam

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	25 May 10	
Obtain all necessary permits for fieldwork Note: the researchers must obtain permission from the government of Greenland (GoG) to visit an installation in the World Heritage Site; alternatively they should identify an alternative site to CPS. The aircraft will not be able to land within the WHS without a current GoG permit.	PI	30 May 10	

Visit all hyperlinks and review all documents referred to in the support plan	Entire Field Team	25 May 10	
Finalize the number/location of sites the team will visit. Provide updated cost estimate for interagency transfer as needed Provide end of season actual costs	CPS		
Note: Passports are required for NYANG 109th and international travel. Please bring TWO copies of your passport to Greenland with you.	Entire field team	Done	

ALLOCATIONS AND SERVICES

Allocations from Inventory

Quant/Unit	Item
1	Satphone
1	PLB
1	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
Helicopter charter, JAV and UMD	Contract done
Manifest on 109 th flights to/from Greenland	Done
Freight	JAV & UMD, done
KISS user days	

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*, 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
If you will have anything beyond personal luggage items on the 109th flight with you, contact Earl Vaughn immediately.	
Hardigg boxes, battery stations, JAV	6 ea., 50lbs.
Hardigg boxes, battery stations, UMD	4 ea., 50lbs.

SUPPORT SCHEDULE

Approx Date	Location	Activity
02 Jun 10	NY > SFJ	LeWinter and Balog to SFJ via 109th, overnight at KISS
03 Jun 10	SFJ > JAV	LeWinter and Balog, SFJ to JAV via AirGreenland
04 Jun 10	JAV	LeWinter and Balog, heli charter
08 Jun 10	JAV > UMD	LeWinter, JAV to UMD via AirGreenland
08 Jun 10	JAV > SFJ > CPH	Balog, departs project via commair
08-09 Jun 10	UMD	LeWinter, heli charter
11 Jun 10	UMD > SFJ	LeWinter, UMD to SFJ via AirGL, 6 nights at KISS
17 Jun 10	SFJ > CPH	LeWinter to US via commair

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
Balog, James	jbalog at jamesbalog.com
Lewinter, Adam	adam.lewinter at gmail.com

PROJECT CONTACT INFORMATION

Research Team

Role	Name	Email	Phone / Fax
Principal Investigator	Jason Box	box.11 at osu.edu	614 247.6899

CPS Team Members

Contact for	Name	Email	Primary Phone
Greenland science planning & support	Susan Zager	Susan at polarfield.com	Denver: 720.320.6159
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)	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 Postboks 1015 DK-3910 Kangerlussuaq, Greenland Tel: 011.299.841598 Fax: 011.299.841599	Earl Vaughn C/O 109 th Aerial Port 1 Air National Guard Rd., Bldg. 20 Scotia, NY 12302-9752 Tel: 518.344.2635 Cell: 518.605.0979

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.nanog.gl/expeditions> or by sending an email to 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
 Section of Nature
 Department of Domestic Affairs, Nature and Environment
 P.O. Box 1614
 3900 Nuuk, Greenland
 e-mail: 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 coordinating C-130 transportation or providing camp gear.

Factors
Ship cargo to destinations on time
Contract helicopter for acceptable dates
Provide lodging in KISS

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.

APPENDICES

Risk Factors and Mitigation
Field Coordinates
Flight Plan

RISK FACTORS and MITIGATION

Factor	Mitigation and Control
Cold Weather	-Team members attend a cold weather injury training course such as Wilderness First Aid or Wilderness First Responder -Proper clothing -Appropriate camping gear, insure sleeping bags are adequately rated
Drills/augers	Drill/auger training/review from previous years experience
Helicopter work	-Participate in helicopter training -Have a SAR plan in place -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
Heavy lifting/body strains and sprains	-Use proper lifting techniques

FIELD COORDINATES TO BE VISITED

JAV

JKS: Jakobshavn 69°10N 49°50W

CLA: Sermeq Avannarleq 69°20.22'N 50°18.41'W

UMD

STS: Store A 70°23N 50°33W

RNK: Rink A 71°45N 51°36W

UMA: Umiamiko A 71 deg 42.054 min 52 deg 23.441 min

UMB: Umiamiko B 71 deg 43.080 min 52 deg 19.039 min

TOR: Torsukatat Avannarleq ~70°04'N ~50°24' W

FLIGHT PLAN

June 4: Bell 212 flight from JAV>JKS>CLA>JAV, 1 hour out, 1 hour back, 2 hours ground time at sites combined. 2 pax, prefer 4th flight with 5th backup.

June 8 and 9: Bell 212 flights; can be on two separate days.

-Flight 1: UMD>STS>TOR>UMD with roughly 1/2 hour at each site.

-Flight 2: UMD>RNK>UMB>UMA>UMD with roughly 1/2 hour at each site.