

PROJECT INFORMATION

Lead Principal Investigator	Paul Doskey
Institute	Michigan Technological University, Department of Civil and Environmental Engineering
Project Title / Grant #	Collaborative research: A synthesis of existing and new observations of air-snowpack exchanges to assess the Arctic tropospheric ozone budget (0713992)
NSF Program and Manager	NSF\OD\OPP\ARC\ARCSS; Dr. Neil Swanberg
PFS Project Manager	Katrine Gorham (Greenland) and Dana Truffer Moudra (Alaska)

Note: This season plan documents support for Alaska-based work only. For the work at Summit Station, please review the Greenland season plan.

LOGISTICS SUMMARY

Researchers on this collaborative project, Doskey (MTU, 0713992, LEAD) and Helmig (CU, 0713943), will conduct extensive campaign ozone and nitric oxide measurements from 2008-2011. They will work at three main sites: Summit, Greenland, representing glacial snowpack; Toolik Lake, Alaska, representing snowpack above permafrost soil and snowpack above frozen lakes; and the Michigan Tech Aspen-FACE research site, representing snowpack above biologically active soil.

In September, 2010, a team of 4 will travel to Toolik Field Station to install project instruments in the flux facility. A team member will return at 3-week intervals until May 2011 to maintain the instruments and conduct the same suite of experiments as they will have done at Summit. The instruments will be removed in May/June 2011.

This work is part of IPY activity #213, "Air-Ice Chemical Interactions," or AICI, and is collaborative with IPY activity #32, POLARCAT ("Polar Study using Aircraft, Remote Sensing, Surface Measurements and Models, of Climate, Chemistry, Aerosols, and Transport").

For the work in Alaska, CPS will provide Toolik user days, provision of a vehicle, and construction support to power the PIs' instrument sites. IAB will provide infrastructure support and services at Toolik. The researchers will pay all other costs 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=0713992

OUTSTANDING ACTIONS AND NOTES

Issue	Responsibility	Due Date	Date Completed / Comment
Obtain all necessary permits for fieldwork	PI		
Visit all hyperlinks and review all documents referred to in the support plan	Entire Field Team		

ALLOCATIONS AND SERVICES

Accommodations

Quant/Unit	Item	Notes
90 ea	Toolik user days	http://www.uaf.edu/toolik/

Truck Support

You are responsible for your own fuel. The vehicle we provide you should be returned clean, with a full tank of gas. Let us know if your vehicle will be dropped off late, or at a location other than where you picked it up. For more information regarding your vehicle, contact: Matt Irinaga, 907-455-4215.

Pick Up	Drop Off	# Days	Comment
TBD	TBD	54	Researchers will use the Toolik truck to get to/from the station in late August and early September

For the duration of your CPS-provided truck rental, you are covered by CPS automobile insurance. Please carry a copy of the following information with you. **If you are involved in an accident, please take photos and contact the Alaska Logistics Manager.**

Name Insured: CH2M HILL Polar Services 9191 South Jamaica Street Englewood, CO 80112-5946 303.771.0900	Producer: Marsh USA Inc. 1031 West 4 th Street Anchorage, AK 99501 907.276.5617 Policy - #BAP534531802
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(This statement is issued for information purposes only and is subject to the terms, exclusions, and conditions of the policy.)

Construction Support

CPS will provide a structure, power and a 4m tower for instrumentation. Since there will be toxic gases used as part of the experiment it will be necessary to design and install a HVAC system to properly filter the gases.

CPS will work with engineers to determine and design appropriate HVAC and electrical systems, including alarm and communications systems.

CPS will utilize several pieces of monitoring equipment currently being used at Summit Station for the same researcher. Once the Summit experiment is decommissioned the equipment will be shipped to Toolik.

CPS will move all building materials to the experiment location in August 2010 by floating the materials across the lake to the experiment location. We will utilize "Jet Dock" as a barge platform. The structure and tower will be built during the fall season in conjunction with the researcher's installation of his equipment. At this time it is anticipated that the facility will be ready for occupancy on or about August 28. The project will be operational from October 2010 through May 2011. (Spring & Fall)

SUPPORT SCHEDULE

Approx. Date	Location	Activity
8/10	Toolik	CPS construction team arrives to assemble/erect the flux facility
8/31	Toolik	Research team of four arrives
8/31	Toolik	Construction team finishes flux facility tasking
8/31 – 9/16	Toolik	Research team installs instruments
9/8	Toolik	Two researchers depart
9/8 – 9/16	Toolik	Remaining team finishes installations
Sept - Jan		Maintenance, preliminary plan of 1 person, X days every 3 weeks, will be very dependent on Toolik Shuttle schedule

FIELD TEAM INFORMATION

Field Team

Name	Location	Date In	Date Out	Email
Detlev Helmig	Toolik	8/31	9/8	detlev.helmig@colorado.edu
Louisa Kramer	Toolik	8/31	9/8	lkramer@mtu.edu
Brie VanDam	Toolik	8/31	9/15	Brie.Vandam@colorado.edu
Claudia Toro	Toolik	8/31	9/15	catoro@mtu.edu
Michael Dziobak	Toolik			
Jack Hueber	Toolik			

Research Team

Role	Name	Email	Phone / Fax
Principal Investigator	Paul Doskey	pvdoskey@mtu.edu	906 487.2745
Collaborator	Detlev Helmig	detlev.helmig@colorado.edu	303 492.2509 /303 492.6388

PROJECT CONTACT INFORMATION

CPS Team Members

Contact for	Name	Email	Primary Phone
Alaska operations	Marin Kuizenga	Marin@polarfield.com	Fairbanks: 907.590.0755
Alaska operations	Dana Truffer Moudra	Dana@polarfield.com	Fairbanks: 907.388.2498
Alaska operations	Matt Irinaga	Matt@polarfield.com	Fairbanks: 907.978.0564
Alaska operations	Christie Hauptert	Christie@polarfield.com	Fairbanks: 907.750.6339

CPS Offices

Denver	Fairbanks
Polar Field Services 8110 Shaffer Parkway Suite150 Littleton, CO 80127 Tel: 303.984.1450/1439 Fax: 303.984.1445	CH2M HILL Polar Services Alaska Office 2325 King Road Fairbanks, AK 99709 Tel: 907.455.4214 Fax: 907.455.4126

SAFETY, ENVIRONMENT, HEALTH and PERMITS

Researchers are responsible for all permits required to conduct fieldwork. Please visit <http://www.polar.ch2m.com/> and navigate to Alaska > Permits for more information regarding this topic.

RISK ASSESSMENT

See Appendix for Risk Factors and Mitigation.

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 CPS' support. Examples might be the availability of the helicopter or camp gear.

Factors
Flux building, flux tower, and conduits ready for occupation August 30
Flux site in natural, undisturbed condition
Power at flux facility available and stable by August 30
All construction equipment removed from flux site by August 30

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
Cold Related Injuries-weather	<ul style="list-style-type: none"> -Team members participate in a cold weather injury training course such as Wilderness First Aid or Wilderness First Responder -Wear proper clothing -Appropriate camping gear, insure sleeping bags are adequately rated -Check the forecast before going out of camp/town -Watch the weather while out -Be mindful of hydration, carry sufficient food -Develop and share your travel plans -Have and share an emergency plan for bad weather
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 Toolik phone number as a means for others to contact you.
Gas Cylinder Handling	<ul style="list-style-type: none"> - Review Haz Comm - Review MSDS (Material Safety Data Sheet)
Hazardous Materials	<ul style="list-style-type: none"> -Haz Comm SMS (Safety Management Standard) -Identify items for hazardous material transportation -Review MSDS (Material Safety Data Sheet)
Sea/Lake/River Ice Travel	<ul style="list-style-type: none"> -Participate in sea/lake/river ice training -Have a SAR plan in place -Have a communication plan in place -Maintain proper rescue equipment and knowledge how to use it -Hire an ice safety expert
Structure Fire	<ul style="list-style-type: none"> -Maintain appropriate fire extinguisher units for building -Develop or review an Emergency Action Plan (EAP) -Have a SAR plan in place for remote camps -Maintain redundant shelters in case of loss of structure due to fire
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