

Support Information Package

McMurdo Station - 2020-2021 Season *Applicant Version*

Project Name:	Collaborative Research: IceCube Gen2 Phase 1; an IceCube extension for precision neutrino physics and astrophysics
Principal Investigator:	Kael Hanson
Event Number:	A-334-M
Award Number:	1719277
Project Dates:	01 Oct 2020 to 30 Sep 2021
Printed on:	Wednesday, 29 April, 2020 at 08:59 MST
Printed for:	Dar Gibson

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Project Information

Welcome to the first page of this worksheet where you will define your project's support requirements. You may navigate through all required pages by clicking the "Continue" button, or select a specific page by clicking any tab or link in the left navigation bar. Your information is automatically saved as you navigate from each page. If you would like to see the overall worksheet site map with a brief description of the information we gather on each page, click the "Site Map" link under **Worksheet Tools** in the left navigation bar and hover your mouse over the "i" icons.

Use this page to describe your research project. This information is required.

* Project Description

A-334 IceCube Upgrade has drill containers and equipment in McMurdo that must be moved to the South Pole via traverse for the Upgrade. The containers consist of: Gen-1, Gen-2, and Gen-3, which are 20ft containers containing the power system for IceCube, also, 40ft UNL drill containers: HPU-1, HPU-2, and the Hose Reel container. Additional equipment includes the fuel tower, Independent Firm Drill (IFD) and associated components. Most of these items will traverse to South Pole via SPOT1 during the 20/21 season.

The main work required in McMurdo is assuring that the all drill containers are structurally sound and able to withstand the South Pole traverse and to make sure that smaller components still in McMurdo are loaded for the traverse.

* Field Overview

In Mid October, IceCube will send one team member to McMurdo to work with an ASC employee that is specialized in welding, metal work and fabrication. The IceCube participant will provide direction and help repair any structural damage to the containers that could prevent transportation to South Pole via traverse. Work will be done at the SPOTSA site using a mobile gasoline powered welder and other power tools needed for preparing the containers for welding and repair.

The IceCube participant at McMurdo will also 1) help direct and facilitate cargo placement onto positions in SPOT1, including the generators and Independent Firm Drill (IFD) and associated components, 2) help identify any secondary equipment such as generator hoods and electrical cables for the traverse, 3) help with moving cargo through McMurdo to the South Pole.

Project Web Site

Important: Please leave blank if the project does not have a website.

Project Information :: Participant Roster

There are **8** participants assigned to this project.

Benson, Mr. Terry Leroy (m)	Project Information	Deployment Information
3823 Coyt Rd Cottage Grove, WI 53527 tbenson@psl.wisc.edu ph: (608) 345-7417 fax: N/A Inst: University of Wisconsin Madison	Project Role: Project Participant SIP Access: Read/Write Excess Baggage pieces / total pounds / direction 0 0	Is NOT Deploying Airport of Departure: Nationality of Passport: Passport Expiration Date: Age at Deployment: Deploying with other events? List event numbers:
Duling, Mr. Dennis V. (m)	Project Information	Deployment Information
11600 NW 70th Street Raymond, NE 68428 dulingde@yahoo.com ph: (608) 354-8169 fax: (608) 263-6738 Inst: University of Wisconsin Madison	Project Role: Project Participant SIP Access: Read/Write Excess Baggage pieces / total pounds / direction 0 0	Yes Is Deploying Yes Has Current Passport Airport of Departure: Lincoln, NE [Lincoln Municipal Airport], USA - LNK Nationality of Passport: United States Passport Expiration Date: February, 2028 Age at Deployment: 60 + Deploying with other events? List event numbers: A-334S
Gibson, Mr. Dar Ethan (m)	Project Information	Deployment Information
16 Old Stage Rd Williston, VT 05495 dgibson@icecube.wisc.edu ph: (802) 379-1203 fax: N/A Inst: University of Wisconsin Madison	Project Role: Project Participant SIP Access: Read/Write Excess Baggage pieces / total pounds / direction 0 0	Is NOT Deploying Airport of Departure: Nationality of Passport: Passport Expiration Date: Age at Deployment: Deploying with other events? List event numbers:
Hanson, Dr. Kael Dylan (m)	Project Information	Deployment Information

<p>222 West Washington Ave Madison, WI 53703-2775 kaeld@icecube.wisc.edu ph: (608) 890-0540 fax: N/A Inst: University of Wisconsin Madison (Department of Physics)</p>	<p>Project Role: Principal Investigator (PI) SIP Access: Read/Write Excess Baggage pieces / total pounds / direction 0 0</p>	<p>Is NOT Deploying Airport of Departure: Nationality of Passport: Passport Expiration Date: Age at Deployment: Deploying with other events? List event numbers:</p>
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Haugen, Mr. James M. (m)	Project Information	Deployment Information
<p>222 West Washington Ave. Suite 500 Madison, WI 53703 haugen@icecube.wisc.edu ph: (608) 261-1430 fax: (608) 262-2309 Inst: University of Wisconsin Madison (Department of Physics)</p>	<p>Project Role: Co-PI SIP Access: Read/Write Excess Baggage pieces / total pounds / direction 0 0</p>	<p>Is NOT Deploying Airport of Departure: Nationality of Passport: Passport Expiration Date: Age at Deployment: Deploying with other events? List event numbers:</p>

Roberts, Mr. Graham Wallace (m)	Project Information	Deployment Information
<p>909 W. Sierra Madre Fresno, CA 93705 cm3h2o@gmail.com ph: (559) 284-0128 fax: N/A Inst: University of Wisconsin Madison</p>	<p>Project Role: Alternate Participant SIP Access: None Excess Baggage pieces / total pounds / direction 0 0</p>	<p>? Alternate Deployment Yes Has Current Passport Airport of Departure: Fresno, CA [Fresno Yosemite International Airport], USA - FAT Nationality of Passport: United States Passport Expiration Date: August, 2028 Age at Deployment: 35-39 Deploying with other events? List event numbers:</p>

Seagraves, Ms. Sheryl L. (f)	Project Information	Deployment Information
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7400 S. Tucson Way Centennial, CO 80112 sheryl.seagraves.contractor@usap.gov ph: (720) 568-2150 fax: N/A Inst: Antarctic Support Contract	Project Role: Alternate Participant SIP Access: Read/Write Excess Baggage pieces / total pounds / direction 0 0	Is NOT Deploying Airport of Departure: Nationality of Passport: Passport Expiration Date: Age at Deployment: Deploying with other events? List event numbers:
Sullivan, Mr. Paul J. (m) Centennial, CO 80112 Paul.Sullivan.Contractor@usap.gov ph: (303) 790-8606 fax: N/A Inst: Antarctic Support Contract	Project Information Project Role: Alternate Participant SIP Access: Read/Write Excess Baggage pieces / total pounds / direction 0 0	Deployment Information Is NOT Deploying Airport of Departure: Nationality of Passport: Passport Expiration Date: Age at Deployment: Deploying with other events? List event numbers:

Additional information or comments concerning your participant roster.

Kael, Jim, Dar and Terry all have read/write access for SIP.
 Added Dennis Duling for read/write access to the SIP.
 Added Sheryl Seagraves for read/write access to the SIP.
 Dennis Duling is Primary
 Added Graham Roberts is Alternate

Project Information :: Project Schedule

* Please enter the estimated date when each member of your project team will **arrive** at McMurdo Station, and the estimated date when each member will **depart** McMurdo Station.

Participant	Arrival Date	Departure Date
Duling, Mr. Dennis	20 Oct 2020	20 Nov 2020

Global Dates of Use

Several places throughout the application require you to fill in "Date of Use From" and "Date of Use To". Using the fields below you may specify the default dates that will initially populate each date of use field.

For example, you may encounter many date spans if you select a large number of products in the inventory cart sections. If you would like to **initially** populate these date fields with default values, enter them below. You have the opportunity to change individual dates as they appear throughout the application, but setting default values may save you repetitious data entry if most or all of your products are needed for the same time period. **You can specify either or both default dates of use.** If you choose not to set any

default values, all date spans will initially be blank. **Note:** many date spans are marked with a red asterisk, which means they must be filled in with a valid date before your worksheet can be finally submitted.

Please remember to adjust the dates of use for items that you do not require for the entire duration of your default date span!

Default Date Of Use From:

20 Oct 2020

Default Date Of Use To:

20 Nov 2020

Additional information or comments concerning your project schedule.

Project Information :: Participant Itinerary

Use this page to view and define the overnight travel for each team participant away from McMurdo Station. If a participant is on the ice but is not accounted for in the overnight stays below, it is assumed the participant is at McMurdo Station. Please enter the date when the participant arrives at the remote field camp and the date when the participant departs for another field site or returns to McMurdo Station.

Please note that this section will not validate if a participant is scheduled to stay overnight at 2 different locations on the same date, OR an overnight stay falls within the red background, indicating the participant is not on the ice (set on Project Schedule page).

There are no participant overnight stays defined for this project. This means that we do not have any record of individual participants staying at field camps during the season and all deploying participants will be spending every night on station. If this is incorrect please "Add a Participant Overnight Leg."

Additional information or comments concerning participant overnight stays away from McMurdo Station.

Project Information :: Additional Sites

Many grids through this application have location/site dropdowns. These dropdown lists are prepopulated with the sites you have defined as overnight locations in the previous Participant Itinerary section, as well as all custom sites you have created for this project.

The following custom and selected sites will appear in dropdown lists on subsequent sections.

Custom Sites
none selected
Other Selected Sites
McMurdo Station

Permits

Individuals and groups traveling to Antarctica are responsible for obtaining any and all required permits. An initial assessment of permit needs should be made by the individual (or group) based on planned itinerary, the nature of interactions with wildlife, materials to be handled and shipped to or from Antarctica, and the need to enter Antarctic Specially Protected Areas. The National Science Foundation (NSF), the National Marine Fisheries Service (NOAA/NMFS), U.S. Department of Agriculture (USDA), U.S. State Department (DOS), New Zealand Environmental Protection Authority (NZ EPA), and the New Zealand Ministry for Primary Industries (MPI) have regulations governing the taking of marine mammals, plants, introduction of non-indigenous species, importation and exportation, transshipment of specimens, genetically modified organisms (GMO), and research vessel clearances for work in foreign exclusive economic zones.

Below is a summary of informational links concerning the various permits. If you have questions about which permits are required, contact your project POC.

Antarctic Conservation Act (ACA)

For information on the ACA and its regulations, see www.nsf.gov/od/opp/antarct/aca/aca.jsp and www.nsf.gov/od/opp/antarct/aca/nsf01151/aca_nsf_01_151.pdf

Researchers should contact acapermits@nsf.gov, and ASC departments should contact environmental@usap.gov.

For maps and management plans for Antarctic Specially Protected Areas (ASPAs), see <https://www.ats.aq/e/protected.html>

Marine Mammal Protection Act (MMPA)

For information about the MMPA and its regulations, see www.nmfs.noaa.gov/pr/permits/

United States Department of Agriculture (USDA)

For information on the USDA and its regulations, see http://www.aphis.usda.gov/import_export/index.shtml

Apply online at http://www.aphis.usda.gov/permits/learn_epermits.shtml

New Zealand Environmental Protection Authority (NZ EPA)

For questions about obtaining the necessary permit, contact PAE (NZ) Ltd at gmo@usap.gov

New Zealand Ministry for Primary Industries (MPI)

For questions, contact PAE (NZ) Ltd at CHC-MPIPermits@usap.gov

Permits :: Antarctic Conservation Act (ACA)

The Antarctic Conservation Act of 1978 (ACA), Public Law 95-541, conserves and protects the native mammals, birds, and plants of Antarctica and the ecosystems of which they are a part. It is unlawful, unless authorized by permit, to:

- Take native mammals, birds, or plants
- Engage in harmful interference
- Enter Antarctic specially designated areas
- Introduce species to Antarctica
- Import certain Antarctic items into the United States
- [Introduce substances designated as pollutants]
- [Discharge designated pollutants]

Note: The items listed in the brackets above, refer to Waste Management Permits. USAP participants are covered under the USAP Master Waste Permit and do not need to apply for a separate waste permit.

For information on the Antarctic Conservation Act and its regulations, see www.nsf.gov/od/opp/antarct/aca/nsf01151/aca_nsf_01_151.pdf. It takes approximately 12 weeks to process an ACA permit. If you have any questions, please contact ACA Permit Office at NSF, acapermits@nsf.gov.

For maps and management plans for Antarctic Specially Protected Areas (ASPAs formerly referred to as SPAs and SSSIs), please see <https://www.nsf.gov/geo/opp/antarct/aca/aca.jsp>

Please check each item that applies to your project. This information is required.

Antarctic Conservation Act (ACA)	Yes	No
* Taking native mammals or birds, or parts thereof (Taking means to kill, injure, capture, handle, or molest a native mammal or bird.)		X
* Harmful interference (take mammals or birds or to remove or damage such quantities of native plants that their local distribution or abundance would be significantly affected)		X
* Entering Antarctic Specially Protected Area (ASPAs formerly SPAs and SSSIs)		X
* Introducing species to Antarctica		X
* Importing certain Antarctic items into the United States		X
* Exporting Antarctic items from the United States		X
* Do you currently have an active ACA Permit? (If you answer yes, you must enter the Permit No. and Expiration date below)		X

Current ACA Permit	
Permit Number	
Expiration Date	

Note: If you are working with Antarctic mammals, you must submit a copy of a valid Marine Mammal Protection Act permit to the NSF Permit Office before your Antarctic Conservation Act application can be forwarded for approval.

Additional information or comments concerning your activities governed by the Antarctic Conservation Act.

Permits :: Marine Mammal Protection Act (MMPA)

The Marine Mammal Protection Act of 1972 (MMPA) establishes a moratorium on the taking of marine

mammals in U.S. waters by any person and by U.S. citizens in international waters, as well as a moratorium on the importing of marine mammals and marine mammal products into the United States. However, certain activities are exempted if authorized by permit:

- Scientific research
- Enhancing the survival or recovery of a marine mammal species or stocks
- Commercial and educational photography
- First-time import for public display
- Capture of wild marine mammals for public display
- Incidental take during commercial fisheries
- Incidental take during non-fishery activities

For more information about the Marine Mammal Protection Act and its regulations, please refer to the following website: <https://www.fisheries.noaa.gov/topic/marine-mammal-protection>. Please read all the information carefully, and follow the steps offered to help determine which type of marine mammal permit or authorization you will need. If you have any questions, please do not hesitate to contact the NOAA/National Marine Fisheries Service s Permits, Conservation and Education Division at **(301) 713-2289**.

NOAA Fisheries recommends submitting an application for a Scientific Research Permit under the MMPA only at least 6 months in advance of the intended research start date. Those MMPA applications that involve mammals listed as threatened or endangered under the Endangered Species Act (ESA) will require additional review, so applications should be submitted at least 8 months in advance.

Please check each item that applies to your project. This information is required.

Marine Mammal Protection Act (MMPA)	Yes	No
* Permit to Take Marine Mammals for Scientific Research and/or Enhancement		X
* Authorization to Import and/or Export Marine Mammal Parts		X
* Permit to take animals listed under the Endangered Species Act		X
* Permit to Import Marine Mammals for Public Display		X
* Permit to Take Marine Mammals for Commercial or Educational Photography		X
* Marine Mammal Authorization for Commercial Fisheries Interactions		X
* Small Take Authorizations for Incidental Harassment of Marine Mammals		X
* Do you currently have an active MMPA Permit? (If you answer yes, you must enter the Permit No. and Expiration date below)		X

Current MMPA Permit	
Permit Number	
Expiration Date	

Additional information or comments concerning your activities governed by the Marine Mammal Protection Act.

Permits :: USDA Import Authorization Permit

The United States Department of Agriculture (USDA) has regulations governing the importation of organisms and samples into the United States. It is the responsibility of the PI to determine if a USDA permit is required. Permits can take up to 16 weeks to process. You will need this permit to bring certain samples into the United States. (Complete V.S. Form 16-3 or 16-7 located at http://www.aphis.usda.gov/animal_health/permits/). See http://www.aphis.usda.gov/permits/learn_epermits.shtml for more information and to apply online.

Please check each item that applies to your project. This information is required.

USDA Import Authorization Permit	Yes	No
* Animal material of any kind		X
* Plant material of any kind, including seeds		X
* Viruses or cell cultures		X
* Rock Samples		X
* Soil Samples		X
* Sediment Samples		X
* Ice Samples		X
* Seawater Samples		X
* Freshwater Samples		X
* Air Samples		X

Additional information or comments concerning your activities governed by the United States Department of Agriculture.

Permits :: New Zealand Ministry for Primary Industries (MPI)

The New Zealand Ministry for Primary Industries (MPI) requires permits to transship through or import samples into New Zealand. The agency is VERY diligent in monitoring and scrutinizing all science samples and requires specific permits for each item. Apply for all required permits as early as possible. Please view the help link in the lefthand menu for more details on permit regulations and contact information.

Due to the large volume of permit requests and processing limitations, MPI permits should be in place prior to deployment. On-ice applications will be limited to emergency situations. Please contact PAE NZ Ltd. at CHC-MPIPermits@usap.gov with questions regarding MPI procedures and applications.

Transshipment of samples through New Zealand - MPI Permit C

Transshipment refers to samples shipped back from McMurdo via air through New Zealand or to samples offloaded from the RV Nathaniel B. Palmer in New Zealand. Samples shipped to the US from McMurdo on the resupply vessel do not require a MPI permit and you can check No for this question. You can expect samples shipped on the resupply vessel from McMurdo to arrive at your US-based institution no later than April 10.

Please check each item that applies to your project. This information is required.

New Zealand Ministry for Primary Industries (MPI) Permit Advisory	Yes	No
* Importing samples into New Zealand from Antarctica?		X
New Zealand Ministry for Primary Industries (MPI) Permit Request	Yes	No
* Transshipping samples from Antarctica through New Zealand?		X

Additional information or comments concerning your activities governed by the New Zealand Ministry for Primary Industries.

Permits :: Permit Applications

The following table lists the various permits you may require and the **minimum lead times** required for filing these permits with the appropriate agencies.

It is your responsibility to determine exactly which permits you will require and then obtain them in a timely manner. Your sample shipment will rely on this action.

Permit	Lead Time
Environmental Protection Agency (EPA)	12 weeks

Samples

Please answer the following question concerning your sample shipment requirements. An answer is required.

Sample Requirements	Yes	No
* Will you be shipping any scientific samples?		X

Samples :: Sample List

Describe your sampling plan (daily or weekly number of samples) in as much detail as possible.

Cargo

Please answer the following question concerning your cargo requirements. An answer is required.

Cargo Requirements	Yes	No
* Do you have any cargo requirements?	X	

Cargo :: Cargo List

- List only items to be shipped. Do not list baggage or handcarry items.
- Include all items that you will purchase, including items that will be shipped to Pt. Hueneme directly from the vendor.
- All southbound cargo must be at Port Hueneme, CA (PTH) by the shipping cut-off deadline.
 - ◆ This information is published at <http://www.usap.gov/logistics/>
 - ◆ If meeting this deadline is not possible, contact your ASC POC as soon as possible.
- For oversized items or large volumes of cargo, the preferred mode will be surface.
 - ◆ Sufficient volumes are required to make a surface shipment efficient.
 - ◆ COMSUR cargo within three weeks of its ROS date without enough volume to justify a container will be diverted to COMAIR in order to meet its ROS date.

Event Number	Ordered By	Item Description	Vendor/Origin	Qty	UOM	Date Ordered /Shipped	Date Received	ROS Date	Special Instructions	Shipper Tracking Number	TCN	Station /Vessel	Shipping Direction	Comments
No CTS cargo records found														

Environmental Requirements

Describe your project's impact on the Antarctic environment. This information is required.

Environmental Impacts	Yes	No	Description (if applicable)
* Perturbation experiments, i.g., re-routing water flow or manipulating the habitat of plants or animals		X	
* Use of explosives		X	
* Drilling or coring of ice rock, or sediment; include description of drilling fluids as appropriate		X	
* Excavation of soil or snow		X	
* Visiting any designated Special Features while working within the McMurdo Dry Valleys ASMA. If yes, please list. Scientific and/or Restricted Zones _____		X	

Describe your project's Hazardous materials use, wastes, releases and containment. This information is required.

Definitions:

- Deployed Equipment is defined as any instrument temporarily deployed for short periods of a few days to multiple operating seasons in a field environment. This is subdivided into two categories: those that are known or suspected to contain Designated Pollutants (hazardous waste), such as electronic devices, batteries, or compressed gases (e.g. automatic weather stations, GPS, etc) and those composed only of inert components, such as sediment traps, ablation stakes, and GPS monuments.
- A release is any substance, either hazardous or nonhazardous that will be dispersed into the Antarctic Environment (air, water, land or ice) intentionally or unintentionally. Under the Antarctic Conservation Act (ACA) a release is defined as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, leaching, dumping, burying, or disposal of a substance. Releases do not include any materials retrograded as wastes (fuels, lubricants, human waste).

Hazardous Materials Used in the Field	Yes	No
* Performing any lab work in the field or use of hazardous materials in the field.		X
Hazardous Wastes	Yes	No
* Generating any hazardous wastes in a lab or a field location		X
Deployed Equipment and Scientific Releases	Yes	No
* Excluding the emissions from the combustion of fossil fuels, will the proposed activities result in any release into the Antarctic environment, including irretrievable science equipment or hazardous materials?		X
Human Waste Management	Yes	No
* Will the proposed activities result in any intentional release into the Antarctic environment of wastewater, human waste, urine, grey water, etc?		X

* Are you planning to return any wastewater, human waste, urine, grey water generated in the field to McMurdo Station for disposal?		X
Fuel and Waste Containment	Yes	No
* Use of fuel, including cooking fuel, at any field site		X

Describe fully any other activities, not described above, that may affect the antarctic environment or any future scientific investigations.

Science Construction

Please answer the following questions concerning your science construction requirements. All answers are required.

Science Construction Requirements	Yes	No
* Do you require the construction or use of field camp structures?		X
* Do you require the use of a Fish Hut or mobile Fishing/Diving shelter?		X
* Do you require fabrications, construction support, or construction materials?	X	
* Do you require any Electrical services?		X
* Do you require the fabrication of Special Shipping Crates?		X
* Do you require the Modification of an Existing Lab Space?		X
* Do you require the Modification of an Existing Lab Space HVAC system?		X

Science Construction :: Fabrications

Please provide the details of your fabrication requirements here.

If you simply require construction supplies, but no fabrications, list them here. Provide as much detail as possible, including exact measurements of the materials needed.

1. Request some type warming shack or shelter for container repair at the SPOTSA site mid-Oct to mid-Nov..
2. Request removal of fall restraint towers from UNL container roofs and put in HPU-1 for traverse to South Pole via SPOT1.
3. Request welding support (welding equipment and trained operator) for repairing UNL containers in prep for traverse transport. 80 hours.
4. Request cutting of material (steel plate) to prep for (3)

Please provide general descriptions, measurements and functions of your required fabrications.

To be determined in field. Need 3/8" and 1/2" steel plate. Triangular and rectangular gussets, expected size 24" x 24" each. Expected qty 24 pcs.

Please provide details about all required fittings, sealant, finishes, paint, etc.

Science Construction :: Fabrications :: Diagram

Construction Diagrams

Please upload all drawings and plans here. **Note: the Construction File, Title, and Description fields are only required if you have a diagram to upload.**

No file uploaded.

Surveyor Support

Surveyor Support	Yes	No
* Do you require any Surveyor Support?		X

Computers

General information about the USAP ITC computer requirements, service and infrastructure can also be found here: <http://www.usap.gov/usapgov/technology/index.cfm?m=4>

Changes to guidance happen frequently, so please check the link regularly for new direction.

The person responsible for implementing and maintaining the deployed systems should fill out this section. Inaccurate or incomplete information in this section may result in delays in processing your SIP.

Ensure your project team is familiar with the most current Information Security Awareness materials. Information Security Awareness training is a Federal requirement and must be completed prior to obtaining access to the USAP network.

All systems connected to the USAP infrastructure are required to meet the most current USAP Computer Screening Requirements materials. Please ensure that everyone on your team is familiar with these requirements as they apply to both project support AND personal systems. All systems unable to meet these requirements will require special approval before being allowed to connect to the USAP infrastructure, either directly or indirectly.

Please answer the following questions concerning your computer requirements. All answers are required.

Computer Support	Yes	No
* Are you bringing your own laptop or desktop computers or data systems not supplied by the USAP or do you already have computers on the USAP network? If yes, require Self-Supplied Computer Hardware and Information Security.	X	
* Are you connecting your computer(s) to onsite equipment, instruments, or networks?		X
* Do you require the use or installation of lab-supplied software?		X
* Do you require a lab-supplied computer in your group's lab or office space?		X
Internet Connectivity and Remote Access	Yes	No
* Does your home institution require the use of Encrypted Tunnels, such as VPN, SSH, SSL, to connect to an external network or to connect into the USAP network from an external network?		X
* Do you require off-site access to your deployed grant equipment for any reason, such as data transfer or system control, or does your deployed grant equipment use non-standard ports for inbound or outbound connectivity?		X
LAN and Email	Yes	No
* Do you have LAN or e-mail requirements?		X
Data Transmission	Yes	No
* Does your project plan to transfer data off-station on a scheduled basis from an installed experiment, instrument or device?		X
Outreach Efforts	Yes	No
* Do you plan on doing any educational outreach during your event?		X
Computer Peripherals	Yes	No
* Do you need portable printing capabilities?		X
* Do you require any external media for data storage?		X

Mobile Devices	Yes	No
* Does your project require an app on a mobile device that will connect to the USAP network?		X
Cloud Storage	Yes	No
* Do you plan to use any cloud storage applications to sync data or collaborate with colleagues outside of McMurdo?		X
Internet access from the dorms in McMurdo is granted under extremely rare circumstances	Yes	No
* Does your project require internet access from the dorms?		X

Computers :: Contacts

Please provide information for at least one point of contact in the event of questions regarding computer services for your project. This individual(s) may be contacted to address a computer incident involving your computer equipment on the Ice, to address the design of your network or network requirements for connecting to your home institution, and also for the stateside contact person for VTCs. Please provide in the Contact Role field if the contact is on-Ice support, home institution support, or another stateside contact.

* Contact Name	Contact Title	* Contact Role	* Institution Name	* Contact Phone	Contact E-Mail
Ralf Auer	Ice Cube Winterover Manager	Home Institution Support	UW - Madison	608-890-1123	ralf.auer@icecube.wisc.edu

Additional information or comments concerning your point of contact.

Computers :: Information Security

The USAP Information Security Program assures USAP policies and the USAP network comply with federal standards, educates all USAP participants on the importance of information security, assures that all participants are granted appropriate access to fulfill their responsibilities, and assures that security measures are in place to protect and support the USAP mission. If you have questions about USAP information security requirements please email Den-ITC-Security@usap.gov.

Computers connected to the USAP network must continuously maintain compliance with USAP computer requirements. A system that falls out of compliance, such as falling behind in anti-virus definitions, patches, or vulnerability remediation, may be disconnected without notice if the NSF determines there is an unacceptable level of risk or threat to the USAP environment.

Operating System and Software Patches

Devices running an operating system (OS) must be running at a version currently supported by the vendor, and be updated with the most current patch level of the OS, including the latest security patches. Applications running on the system must also be patched when patches are released by the software vendor.

Antivirus

All devices must have antivirus software running at the current version and be configured for auto-updates. Computers must be virus free to connect to the USAP network and maintain the current DAT version as updates are available.

Prohibited Protocols

Telnet and FTP are prohibited, as they present a high risk to the USAP network. These protocols must be replaced with secure versions such as SSH and SFTP.

Client and Server Software

Permitted for use are client software used for the purposes of email and web browsing, and other client software, such as SSH and SFTP.

Software that is not permitted for use on the USAP network includes but is not limited to:

- Peer-to-peer (P2P) software, e.g., BitTorrent, KaZaA, Gnutella, Freenet
- Email server software that provides SMTP/POP port services. Some examples include: Exchange, Eudora, send mail
- Web server software that provides HTTP/HTTPS/FTP services. Some examples include: IIS, Apache, Lighttpd
- Network management servers, such as DNS and SNMP
- Network or port scanning software, such as Nessus
- Network penetration tools such as Metasploit, BackTrack, Wireshark, etc.
- Unauthorized wireless access points and other network devices (firewalls, routers, etc.)

Software requiring NSF approval for use on the USAP network for official business purposes (such as educational outreach) includes Skype and other network bandwidth intensive applications such as video and audio streaming software.

Vulnerability Scanning

All equipment on the USAP network is continually scanned for vulnerabilities. The PI or computer system point of contact will be notified if a vulnerability is detected. All critical and high vulnerabilities must be remediated within 30 days. Any non-compliant systems will be escalated to the NSF for possible disconnection from the network.

	Yes	No
* I acknowledge that I have read and understand the USAP information system requirements provided on this page for	X	

connecting equipment to the USAP network.		
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Computers :: General Computer Support

Please define your general computer support requirements by clicking the above section links or the Continue button. **NOTE: Laptops are no longer available for issue to science projects from Crary IT. Laptops from existing inventory will be issued only as temporary replacements for grantee-owned laptops that have failed during deployment.**

Computers :: General Computer Support :: Self-Supplied Computer Hardware

Many grantees find that bringing their own computers is the most convenient way to meet their computing needs. Some monitors are available, precluding the need to ship your monitor with your computer.

Station LAN Notes:

All LAN connections are standard Ethernet. Your computer must have a LAN (network) card to access the network. This will provide you with e-mail, data transfer and intranet connectivity, as well as access to networked resources such as printers.

You have indicated your plan to bring your own computer(s) to Antarctica, or you already have computers in place in Antarctica. Please describe these computer(s).

* Type of Computer	* Qty	* Operating System/Version/Patch	LAN Connection(s) Required	Connecting to Lab Equipment	* Will this equipment remain on station?	* Will this equipment be replaced this year?
PC	1	Windows, Linux, Mac	X		No	No

Application of Patches and Updates	Yes	No
* Can all of the systems used to support your project be updated with security patches and updates within a few weeks of release by the vendor?	X	

NOTE: If you do not intend to apply security updates and patches on a regular basis your system may be at risk to damage from viruses and other exploits. Additionally, all vulnerabilities detected during vulnerability scanning require remediation within 30 days of notification. Any system that is non-compliant will be escalated to the NSF for possible disconnection from the network.

If you answered No to the above question, please explain:

Describe instruments or equipment you are connecting to your computer:

Describe any additional Crary Lab-based connectivity or application requirements you have: (NOTE: For all field-based requirements, please include these in the Communications Section):

Computers :: Internet Connectivity and Remote Access :: Encrypted Tunnels (Including VPN)

VPN Details

If your home institution requires the use of Virtual Private Networking (VPN) software to connect to its network, please identify the name and version of the VPN software you will use to connect to this network. Providing this software is the responsibility of the grantee.

* Destination IP	* VPN Software Name and Version	* Protocol (IPsec, UDP, TCP, etc...)	* Port Used for Each Protocol	* Start Date	* Expiration Date	* Purpose/Justification
No data entered for this grid						

Other Encrypted Tunnels

If you require any other sort of Encrypted Tunnel such as SSH, SSL, etc, please provide the following:

* Destination IP	* Source IP	* Protocol (IPsec, UDP, TCP, etc...)	* Port	* Start Date	* Expiration Date	* Purpose/Justification
No data entered for this grid						

Contact Information

Please include the name and email address of the best person to contact regarding encrypted tunnels questions.

* First and Last Name of Contact	* Email Address
No data entered for this grid	

Computers :: Internet Connectivity and Remote Access :: Port Access

If preferred, upload your requirements using this template and upload.

No file uploaded.

Computers :: Cloud Storage

File Transfers	Yes	No
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Computers :: Cloud Storage :: Requests for Dorm Wifi Access

Internet access from the dorms in McMurdo is granted under extremely rare circumstances. Please describe your 24/7 critical need for access to dorm wireless and the ramifications if not approved.

If dorm WIFI access is being requested for multiple project participants, upload list using this template and upload. _____

No file uploaded.

Computers :: Cloud Storage :: Requests for Mobile Device Access

Mobile device access is granted under extremely rare circumstances. Please describe what function your mobile device will provide that cannot be accomplished through a laptop or desktop.

If mobile device access is being requested for multiple project participants, upload list using this template and upload. _____

No file uploaded.

Communications

Please indicate your communications requirements. All answers are required.

Communications Requirements	Yes	No
* Will your project require the installation of communications equipment (voice, data, or video)?		X
* Do you expect your project to require extensive wireless data transmission or voice communications from the field?		X
* Does your team have voice communication requirements using Iridium satellite phone, HF or VHF field radios?	X	
* Will your team be bringing equipment that operates at radio frequencies, or using RF equipment not issued through ASC?		X
* Does your project require antenna and/or tower support for voice or data transmission by means other than what is provided by the existing infrastructure?		X
* Does your team require line-of-sight radio telephones?		X
* Does your team require telephone cabling at currently unserved locations?		X
* Do you have Iridium SIM card-only requirements?		X
* Does your project require data connectivity in the field?		X
* Do you have other communications requirements?		X
* Do you or are any of your team members plan on bringing a personal satellite communication device (e.g. InReach, SPOT, etc.)?		X

Communications :: Cart Contents

You have requested the following inventory item(s):

McMurdo Station

Field Radios

VHF Radio	
Product Name	Qty
1. Motorola HT750 Handheld Radio Each radio provided includes 16 preprogrammed channels, antenna, battery, belt clip and single unit rapid rate desktop charger.	2
5. Single Unit Rapid Rate Charger, 120V Can rapidly charge spare battery in one to three hours.	2

Communications :: Field Radios

You are required to maintain two separate forms of communications when travelling outside of McMurdo Station. This includes navigating off established roadways, operating outside of an established camp, or travel by helicopter to a remote site.

VHF radios are considered the primary form of communications within McMurdo Station and nearby locations. Ask your ASC POC for clarification on VHF coverage and procedures if you are uncertain of availability and operations.

Provide details on how many participants in your project are deploying, and will operate in the field that requires the use of Field Radio equipment and how long will they require its use.

* Number of participants requiring Field Radios	* From Date	* To Date
1	20 Oct 2020	20 Nov 2020

Provide details on any additional requirements to Field Radio Equipment (e.g. specific frequencies, headsets for VHF handheld radios, desktop units for Iridium handsets, etc.). If you are uncertain of availability of equipment, contact your ASC POC.

1. Request 2 hand held radios
2. Request 2 single unit chargers.

Communications :: Terrestrial and Satellite Frequency Registration

Attach to your SIP one or more Data Sheets or equipment Specification Sheets that include RF characteristics. Upload the documents as a Project File after clicking this link

Communications :: Personal Satellite Communication Devices

Please read the NSF safety alert memo.

Please inform the MacOps Supervisor and the Field Support Supervisor upon arrival at McMurdo Station, or the Marine Projects Coordinator (MPC) if on a vessel, or the station manager at Pole or Palmer.

If you would be willing to share contact information, please enter it in the box below. This will enable station and vessel communications personnel to use your device as a back-up form of communication.

Laboratory

Please indicate your laboratory, office space, and equipment requirements. All questions are required.

Laboratory, Office Space and Equipment Requirements	Yes	No
* While in McMurdo, do you require the use of lab space, office space, cold room bench space or installed lab equipment (e.g., fume hood, laminar flow bench, muffle furnace, autoclave, etc.)?	X	
* Do you require aquarium space or tanks at McMurdo Station?		X
* Do you require cold storage space at McMurdo Station?		X
* Will your team require Dry Valley laboratory spaces or installed equipment?		X
* Do you have requirements for laboratory instruments, or small science equipment?		X
* Do you have requirements for stocked chemicals?		X
* Will you be sending any non-stocked chemicals?		X
* Will your project require basic stocked lab materials, such as glassware, plasticware, or other consumable items?		X
* Will your project require the use of radioisotopes?		X
* Will your project require the use of liquid cryogenics or ice?		X
* Will your project require the use of controlled substances?		X

Laboratory :: Cart Contents

You have requested the following inventory item(s):

McMurdo Station

Lab Space and Installed Equipment

Office Space							
Product Name	Qty	# of Users	# of 4' Desks Requested	Unoccupied > 5 days: From	Unoccupied > 5 days: To	Dedicated or Pooled Use?	Additional Notes
		Date of Use From	Date of Use To				
Independent Office (Please note: There is a severe shortage of offices - please minimize requirements)	1	2	1			Dedicated	

	20 Oct 2020	20 Nov 2020	
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Laboratory :: Lab Space and Installed Equipment

Please indicate your need for lab space and installed lab equipment (e.g., fume hood, laminar flow bench, muffle furnace, autoclave, etc.). See lab floor plans. _____

Describe completely any additional lab space, installed equipment or special power requirements.

Staging/Storage Space

Please indicate your staging and storage space requirements. All questions are required.

Staging space is temporary work space in McMurdo, indoor or outdoor, in which to assemble, prepare, and test science instruments and/or field equipment. This space is most frequently used at the beginning and end of each field season but can be requested for use during the field season if required for instrument maintenance. Please be sure to specify ALL staging space needs as this kind of work space is at a premium, and it may not be possible to provide additional, unplanned space once your group arrives on site.

Note: Space in which your field gear is staged is also available to use while in the field (to store personal items).

On-ice STAGING Space Requirements	Yes	No
* Do you require on-ice staging space?		X

For clarification on storage issues, please reference the USAP On Ice Storage Policy. _____

On-ice STORAGE Space Requirements	Yes	No
* Do you require temporary on-ice storage space?		X
* Do you require over-winter on-ice storage space?	X	

Staging/Storage Space :: Storage Space List

Over-Winter Storage Space Requirements

Item Description	Approximate dimensions of items to be stored	Total Item Wt. (lbs.)									Comments (if applicable)
ID#10 UNL - Reel Container - 40' long, on ISO2 (NOT Hercable)	Fits other: details explained below	20000									SPOTSA
			Date Over-Winter Space Needed: Start Date 10/01/2019						End Date 02/01/2023		
ID#12 UNL - HPU-2 - 40' long, on ISO2 (NOT Hercable)	Fits other: details explained below	28000									SPOTSA
			Date Over-Winter Space Needed: Start Date 10/01/2019						End Date 02/01/2023		
ID#14 UNL - Flat Rack/Ski-Sled System #2 - 40'L, ISO2 (Fuel tower, panel, on now)	Fits other: details explained below	20000									SPOTSA
			Date Over-Winter Space Needed: Start Date 10/01/2019						End Date 02/01/2023		

ID#22 Filtration Sub-Components, Spares	Fits other: details explained below	2000									
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 11/20/2021										
ID#28 TOS/Tower Refabricated items	Fits other: details explained below	2000									
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 11/27/2021										
ID#29 MSHR Spare Parts	Fits other: details explained below	1500									
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 11/27/2021										
ID#36 Return Water Cable Reel	Fits other: details explained below	3500									
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 12/30/2021										
ID#37 Cable, Combo	Fits other: details explained below	3000									
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 12/30/2021										
ID#40 Drill Hose (from PSL) (DNDF) 4@4800#, 350cu	Fits other: details explained below	19200									DNDF (-50C MIN)
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 12/01/2022										
ID#41 Drill Hose (from Italy) (DNDF) 9@4800#, 350cu	Fits other: details explained below	43200									DNDR (-50C MIN)
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 12/01/2021										
ID#44 Deployment Weights 87 - 93	Fits other: details explained below	3500									
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 02/05/2022										
ID#69 20' Milvan Container (empty)	Fits other: details explained below	4000									
	Date Over-Winter Space Needed: Start Date 02/01/2020 End Date 12/31/2021										
ID#71 Generator Hoods new (5x)	Fits other: details explained below	300									SPOTSA
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 12/31/2021										
ID#75 TU-20 Shaft	Fits other: details explained below	400									SPOTSA
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 12/31/2021										
ID#83 DOM Handling Facility (DHF)	Fits other: details explained below	12000									SPOTSA
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 12/31/2021										
ID#84 DOM Sleds (2x)	Fits other: details explained below	1000									SPOTSA
	Date Over-Winter Space Needed: Start Date 02/01/2021 End Date 12/31/2021										

Describe any additional over-winter storage space needs in detail:

Request space to store Ice Cube Drill Hose spools over winter. Up to 13 spools approx 8ft diameter 5ft height. Requirement is Do Not Deep Freeze below -50C. Planning for winter location of the hose is TBD but this is a reminder that storage in McMurdo may be requested.

Refer to cargo list (cross reference with ID#) for details on quantity, dimensions, weights, shipping to/from plan.

Scientific Services

Please indicate your scientific services support requirements. All answers are required.

EXTERNAL AGENCY SUPPORT*

*External Agency Support is **NOT** provided by the Antarctic Support Contract (ASC). This information is required for logistics planning purposes only. Investigators **must** contact each agency to coordinate support and to ensure supportability and equipment availability. Contact information for each agency will automatically be provided via email upon request for services.

Scientific Services Requirements	Yes	No
* Will your project require spatial analysis, remote sensing, or GIS support from the Polar Geospatial Center (PGC)?		X
* Will your project require ice core drilling support from the Ice Drilling Program (IDP)?		X
* Will your project require support from the National Ice Core Laboratory (NSF-ICF)?		X
* Will your project require GPS, LiDAR, UAS, or power systems support from UNAVCO?		X
* Do you have requirements for seismological support that involves PASSCAL?		X

INTERNAL CONTRACTOR SUPPORT*

*Internal Contractor Support services are currently provided by the Antarctic Support Contract (ASC).

Scientific Services Requirements	Yes	No
* Will your project require research associate support?		X
* Will your project require meteorological services?		X

Please describe your need for any additional scientific services.

Scientific Services :: UNAVCO Support

Do you require data collection from Small Uncrewed Aerial Systems (sUAS)? UNAVCO has a number of small UAS		
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platforms and sensors as well as certified pilots.		
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Medical Information

Please provide information about your field camp, risks, emergency planning, etc.

Support Contractor Medical staff will review the information provided to determine if your field team will require a medical set and, if so, what medications and medical supplies will be required.

Groups meeting specific conditions are now required to carry medical supplies and basic medications; others may request a medical set to be provided to the field party. These conditions include, but are not limited to the following:

(1) any group of five or more individuals remaining in the field for a duration of 24 hours or longer and who (2) will be more than 5 hours distance by ground travel from any USAP Station, research vessel, or contractor staffed and operated field camp.

Medical Information	Yes	No
* Will your team have a participant who has medical training?		X
* Will the nearest USAP station, research vessel, or contractor staffed and operated field camp be greater than five hours distance by ground transportation from your field location?		X

Field Support

Please indicate your field support requirements. All questions are required.

Field Support Requirements	Yes	No
* Will your team be conducting research in a field setting? (i.e.: outside of the McMurdo Station area)		X
* Will your team require field camp equipment?		X
* Will your team require food for use in the field?		X
* Will your team be working or traveling on the sea ice?		X
* Will your team be working in a glaciated environment?		X
* Will your team be traveling higher than 8,000ft./2,439m? (i.e.: Mt. Erebus, East Antarctica)		X

Field Support :: Field Safety Training Courses

Each participant working or traveling in a field setting is required to take at least one field safety training course. A field setting is defined as an area outside of McMurdo town boundaries, off of the established surveyed roads, or outside of the air field boundaries. The Field Safety and Training (FS) staff will determine which trainings your team members will be required to complete based on the information provided in your Project Description and Field Overview. Please plan on spending up to **10 days** in McMurdo in order to complete all of your required trainings. The courses offered by FST are listed below.

Antarctic Field Safety (AFS)

Who: All USAP personnel who will:

- Travel off the established road network or recreational trail system are **required** to take this class every year before leaving McMurdo.
- Ride in helicopters are **required** to view the helicopter safety video every year before leaving McMurdo in a helicopter.
- Work on the sea ice are **required** to take sea ice refresher training every year before traveling on the sea ice.
- Winter-over in Antarctica (Winter-Over Survival Training also covers this requirement)
- Required each season and expires after 90 days off the ice.

Why: Antarctica presents specific environmental concerns (eg, extreme cold, wind, sea ice) that can be life- or limb-threatening. This class provides education necessary for USAP personnel who might find themselves in an emergency situation where use of a survival bag is needed. Skills not instantly intuitive but essential to effective survival bag use are taught and practiced. Helicopter training and the sea ice

refresher are mandatory before helicopter travel and sea ice travel during the season.

Description: At the end of this course, participants should be able to understand and use the USAP 3-Step Decision Making Model risk-management tool; have an awareness of cold weather injury prevention and care; and understand the contents and use of a survival bag, with special emphasis on stove starting (MSR WhisperLite) and tent set up (Black Diamond Fitzroy). Currently, the helicopter safety video (20 min) and sea ice refresher (45 min) are offered during this class.

Course duration: 4 hours.

Altitude

Who: All McMurdo-based personnel who will be working at or above 8000 feet without close support are **required** to take this class every year before going to altitude. This class is also recommended for anyone working at altitude with close support.

Why: Working at altitude presents specific health and safety concerns that can be life-threatening. This class provides simple education intended to raise awareness of potential risks associated with work at altitude and increase ability to recognize and treat onset of altitude sickness in a timely manner.

Description: Course participants are given a basic understanding of physiologic processes and risk-management concerns associated with high altitude. Special emphasis is given to prevention, assessment, and treatment of altitude sickness as well as use of prescription altitude medications (Diamox, dexamethasone, and nifedipine), a portable hyperbaric chamber (Gamow bag), and oxygen administration.

Course duration: 2 hours.

Glacier Travel and Crevasse Rescue

Who: All USAP personnel working on glaciers above firn line and crevassed areas of an ice sheet or ice shelf. A customized course is available for personnel working in or around the Erebus ice caves or on traverse. This course is not required for those working on bare glaciers in the Dry Valleys.

Why: Specific hazard recognition and specialized travel and rescue techniques are required to reduce risk while traveling in glaciated terrain.

Description: The first half day is classroom based and covers glaciology, hazard recognition, knots, and fixed-line ascension. The full-day field-based component covers roped glacier travel and crevasse rescue techniques. Also covered are snow walking techniques, use of a mountaineering axe for travel and self-arrest, snow protection, snow anchor construction, and pulley-assisted single-team crevasse rescue.

Course duration: 1-2 days.

GPS

Who: This course is required for all grantees working on the sea ice and ASC personnel who will be operating a vehicle on the sea ice. It is also highly recommended for all groups who regularly travel outside of McMurdo Station or use a GPS for field work.

Why: The GPS, along with good decision making, is an effective tool to help you safely navigate.

Description: Course participants receive education in use and functionality of handheld GPS units. Participants should leave the course with the ability to create a waypoint, create and follow a route, and use trackback functions. Class concludes with a practical outdoor component at McMurdo Station.

Course duration: 2 hours.

Outdoor Safety Lecture (OSL)

Who: This course is required annually for all USAP participants who want to recreate on any established trail where checkout is required.

Why: McMurdo Station is fortunate to have a trail network allowing for off-base recreation. Given the potentially harsh environmental conditions in this trail system, a check-out (and check-in) system is in place; annual reminder of associated procedures is worthwhile.

Description: Course attendees receive basic cold weather awareness and prevention training, area familiarization, and an understanding of the check-out process and associated emergency procedures.

Course duration: 1 hour.

Sea Ice

Who: All USAP personnel who will be traveling on the sea ice are required to take this training. In subsequent seasons, personnel traveling on the sea ice are required to take the sea ice refresher (following the AFS course) before traveling on sea ice.

- If it has been 5 or more years since the participant has taken a full sea ice course or sea ice refresher, the full sea ice course is required.

Why: Sea ice is a dynamic environment. Failure to recognize or properly assess the hazards of sea ice cracks could lead to injury, equipment damage, or death. USAP personnel are provided with sea ice travel principles that require education (including annual refresher) to use effectively. **Description:** This course covers basic sea ice formation and deterioration processes, hazard recognition, and safe sea ice travel practices. The first hour is classroom based. The remainder of the day will be spent on

the sea ice doing travel profiles on cracks to assess safe crossing points for light vehicles and heavy equipment.

Course duration: 1 day.

Shakedown Courses: Deep Field and Dry Valley

Who: This course is customizable and required for personnel going to field camps that do not have 24-hour heated buildings or hard-sided structures. All personnel must complete the Antarctic Field Safety course prior to the shakedown course.

Why: This course provides practical field application of skills learned in the AFS course such as snow wall construction, v-thread anchors, tricks of melting snow to make water, and cold weather management. This is the only opportunity groups have to test out the equipment they will be using in the field, and it gives them the ability to return to McMurdo post course to improve or change systems and gear.

Description: Field camp protocols and expedition behavior are covered in both shakedown courses. The Deep Field Shakedown covers snow camping principles such as tent set up, wind wall construction, water making and field rations, and HF radio use in an actual winter environment. The Dry Valley Shakedown covers principles specific to field camps based in the McMurdo dry valleys, including camp set up on ice or dirt, wind awareness, and use of field tents and HF radios in a setting meant to emulate the actual environment.

Duration: 2 days.

Mechanical Equipment

Please enter your mechanical equipment and generator requirements. All questions are required.

Mechanical Equipment Requirements	Yes	No
* Will your team require mechanical equipment that they will operate?	X	
* Will your team require portable generators that they will operate?	X	
* Will your team require any renewable energy systems or equipment?		X

Mechanical Equipment :: Cart Contents

You have requested the following inventory item(s):

McMurdo Station

Equipment

Heaters				
Product Name	Qty	Dedicated	Date of Use From	Date of Use To
Herman Nelson (heater)	1	X	20 Oct 2020	20 Nov 2020

Generators

Generator			
Product Name	Qty	Date of Use From	Date of Use To
Portable, 2.0kW	1	20 Oct 2020	20 Nov 2020
Portable, 5.0 kW	1	20 Oct 2020	20 Nov 2020

Additional Notes on your Mechanical Equipment inventory requirements

Could use smaller heater for personnel warmup

Mechanical Equipment :: Equipment

Select the type of mechanical equipment your team will require, if any:

Describe completely any additional equipment requirements.

Mechanical Equipment :: Generators

Select the type of generator(s) your project team will require, if any:

Describe completely any additional generator requirements.

Air Support

Please indicate your air support requirements. All questions are required.

Air Support Requirements	Yes	No
* Do you require support from helicopters to camps or inland stations on Antarctica?		X
* Do you require support from LC-130, Basler, or Twin Otter aircraft between McMurdo and other stations/camps in Antarctica?		X

Diving Support

Please indicate your diving requirements. All questions are required.

Diving Requirements	Yes	No
* Will your team members be diving?		X
* Will your project require ASC divers?		X
* Will your project require dive tanks for dedicated use at a remote field camp?		X
* Will your project require dives in the contaminated zone (Hut Pt. to Transition)?		X
* Will your diving require the use of a rebreather?		X

Vehicle Support

Please indicate your vehicle requirements. All answers are required.

Vehicle Requirements	Yes	No
* Will your project require the use of any vehicles?	X	
* Will your project require the use of any snowmobiles?		X
* Will your project require the use of the McMurdo Area Taxi Service?	X	

Vehicle Support :: Cart Contents

You have requested the following inventory item(s):

McMurdo Station

Vehicle Requirements

Tracked Vehicle						
Product Name	Qty	Date of Use From	Date of Use To	Reason For Use/Additional Information	Dedicated or Pooled	Location
Mattrack	1	23 Oct 2020	20 Nov 2020		Pooled	

Wheeled Vehicle						
Product Name	Qty	Date of Use From	Date of Use To	Reason For Use/Additional Information	Location	
Pickup truck	1	23 Oct 2020	20 Nov 2020			

Vehicle Support :: Vehicle Requirements

Please select your vehicle requirements from the following list.

Describe completely any additional vehicle requirements.

1. Request that McMurdo Heavy Equipment Shop perform winterization upgrades to Ice Cube 278B during 2020 winter season.
2. Request delivery of 10 gal of 76 Triton 75-90w Syn Lube EP oil to South Pole from McMurdo. This request is also in 334-S SIP.

3. Request delivery of 55gal drum (or similar size) of 2 stroke oil to South Pole from McMurdo for snowmobiles that are currently setup for oil, not premix. This request is also in 334-S SIP.

Vehicle Support :: McMurdo Area Taxi Service

Taxi service is provided by the Shuttles Operations department. Rides are available in and around town, often on short notice, during the day. Night taxi service is available on a more limited basis starting in November. Call the Shuttles Operations office to schedule your pick up.

* Frequency	* Destination	Comments
On Occasion	Other	SPOTSA Site

Describe completely any additional McMurdo Area Taxi Service requirements.

Will need occasional taxi transportation to SPOTSA site from McMurdo Station.

Heavy Equipment

Please indicate your heavy equipment/drilling requirements. All questions are required.

Heavy Equipment/Drilling Requirements	Yes	No
* Will your team require the use of heavy equipment?	X	
* Will your project require the use of an auger drill?		X

Heavy Equipment :: Heavy Equipment Details

* Equipment Needed	* Location of Use	From Date	To Date	Description of Requested Support
Other (Describe Below)	SPOTSA	20 Oct 2020	20 Nov 2020	Crane and Loader support to move drill containers for repair and load on traverse skis

Describe completely any additional equipment requirements.

Request Crane and Equipment support from Traverse team to move drill containers around for repair work and lift onto ski sets for SPOT1 during Winfly season and while IceCube team member is in McMurdo Oct 20- Nov 20.

Explosives

Please indicate your explosives requirements. All questions are required.

Explosives Requirements	Yes	No
* Will your team require the use of explosives?		X

Explosives :: Explosive Requirements Details

Explosives are received and stored in USAP magazines. Access is controlled by the ASC Blaster Lead. Please contact the Fleet Operations Supervisor for any questions about explosives storage or access.

UAS/UAV

In addition to the CONOPS document (CONOPS requests due to the NSF by July 31st), each group operating a UAS/UAV will require a Record of Environmental Review (ROER), prepared by Environmental for review and approval by NSF Environmental, which will require supplemental information provided by the PI.

Note: The use of any Unmanned Aerial Vehicles (UAV s), drone, or remotely piloted aircraft in Antarctica by U.S. Antarctic Program (USAP) personnel is prohibited without specific authorization from the National Science Foundation (NSF). Please refer to the programmatic notice distributed by NSF on March 8, 2018 for more information. [NSF UAV Programmatic Notice](#)

Unmanned Aerial Vehicles (UAV) or Unmanned Aerial Systems (UAS)	Yes	No
Does your research require the deployment of an Unmanned Aerial Vehicle (UAV) or Unmanned Aerial System (UAS) of any kind?		X
Will you be requesting the use of a small Uncrewed Aerial System (sUAS) from UNAVCO?		X

UAS/UAV :: UNAVCO sUAS

Please navigate to the Services tab and then to the UNAVCO section to request the use of small Uncrewed Aerial Systems (sUAS). If you are ONLY using a UNAVCO sUAS, you do not have to submit a ConOps.

Media/Outreach

Media	Yes	No
* Do you have individuals who are working as embedded media with your team or someone whose primary responsibility will be filming/photographing or other duties for publicity/outreach?		X

Media/Outreach :: Embedded Media

The information provided below will enable ASC to work with your embedded media/outreach person in advance of deployment to increase awareness of media needs and better assure a successful outcome.

NOTE: If your outreach plan includes using the Internet to transfer files to your home institution, be sure to provide this detail on the Computers tab of this POLAR ICE worksheet.

Briefly describe the name of the media outlet(s), what the format (video, print, etc.) will be.

Note: Internet connectivity in Antarctica is not as robust as it is elsewhere in the world. For example, a media plan that has video files hand-carried off the continent may be more successful than a plan that requires files to be uploaded via the Internet to be transferred off-continent. Please remember to enter Internet requirements under the Computers tab on the Outreach Efforts page.

Project Files:

The following requirement documents have been uploaded and should be included with the Fastlane submission.