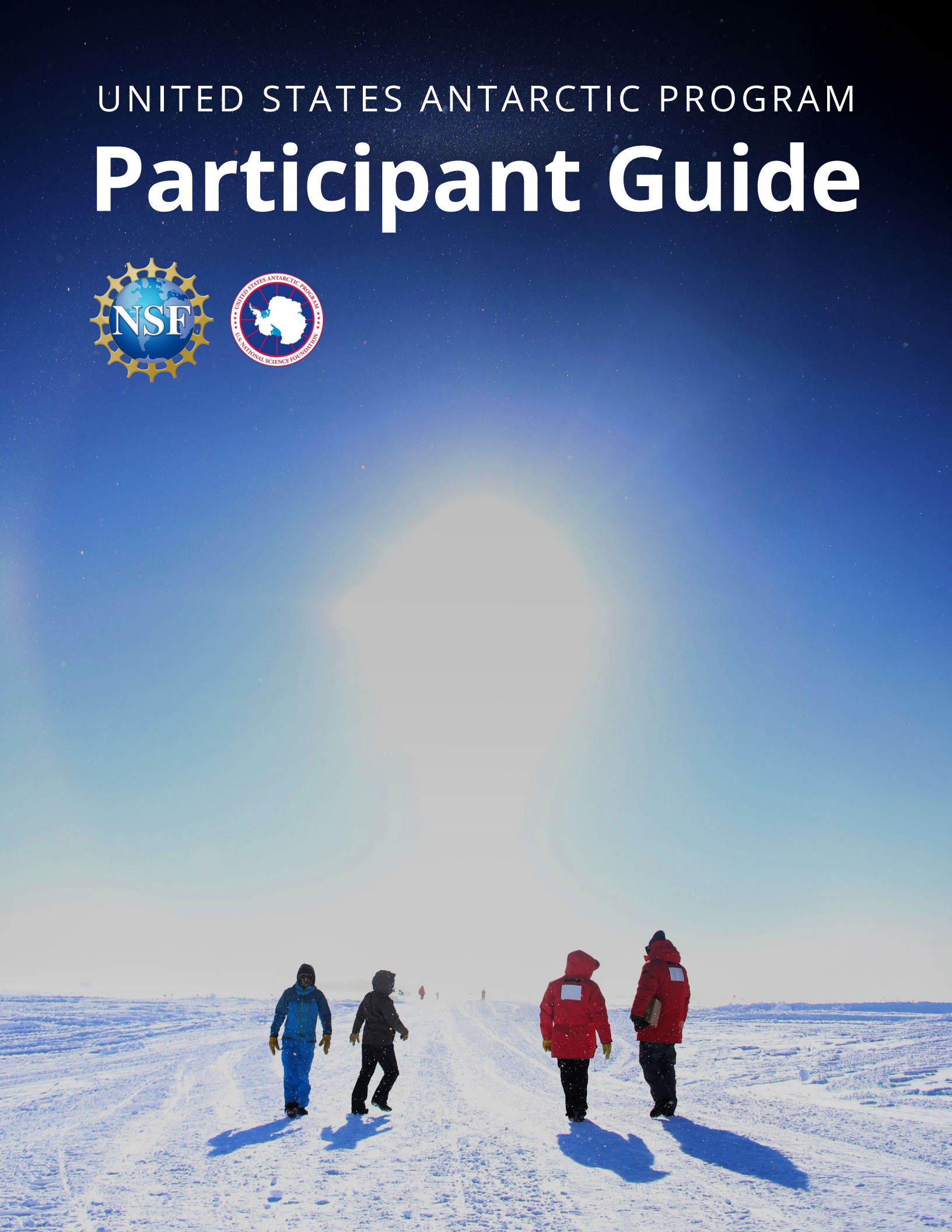
UNITED STATES ANTARCTIC PROGRAM

Participant Guide



2026 Edition

United States Antarctic Program Participant Guide

U.S. National Science Foundation
401 Dulany Street
Alexandria, VA 22314

Cover Photo: Marissa Goerke



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Welcome to the U.S. Antarctic Program

The U.S. Antarctic Program (USAP) Participant Guide provides practical information about this U.S. National Science Foundation-managed program and can help you prepare for living and working in Antarctica. You are strongly encouraged to read it in full, well before you deploy. The Guide should be used as a reference because it contains answers to many questions that may arise during deployment.

Ensuring the safety and health of all its participants is a priority for USAP. Harsh Antarctic conditions present numerous challenges to safety—even routine tasks can be potentially hazardous. We ask all participants to contribute to systematic risk assessments, hazard elimination or control, safe work practices, and the appropriate use of personal protective equipment to reduce the risk of injury and illness. It is imperative to stay safe!

As a USAP participant, you are also responsible for full compliance with measures to protect the Antarctic environment. Failure to meet these obligations may result in penalties under U.S. law. Please pay close attention during your training on how to ensure the protection of Antarctica.

All personnel are expected to exercise the highest level of professional and ethical conduct, treat others with dignity and respect, and raise concerns through appropriate USAP resources and processes when needed. All participants are expected to understand and abide by the Polar Code of Conduct. The U.S. Antarctic Program requires conduct that supports a safe, respectful, and professional community, free from discrimination and harassment.

On behalf of the USAP leadership team, I wish you a productive and safe deployment.

Jean Cottam Allen, Office Director
Office of Polar Programs
U.S. National Science Foundation



Overview

This guide covers deployment planning, environmental policies, travel, safety, living and working in Antarctica and more. Your deployment point of contact (POC) can provide more detailed instructions and requirements about your position. Information about U.S. Antarctic Program (USAP) is also available at www.usap.gov.

USAP participants, including grantees, contractors, visitors and military personnel, should refer to grant instruments, employment contracts or other legally binding documents for authoritative information on their deployment. This guide is for reference purposes only.

Basics

Continent

Antarctica is home to some of the coldest temperatures and strongest katabatic winds in the world, as well as a region (the McMurdo Dry Valleys) so devoid of any form of water that it serves as an analogue for Mars. The continent is almost entirely covered by an ice sheet that can reach up to 4.8 kilometers (3.0 miles) thick and holds roughly 88% of the land ice and 61% of the fresh water on the planet.

Unsurprisingly, Antarctica is the least populated continent on Earth, with no known history of indigenous peoples and few species surviving its interior besides insects, tardigrades (aka water bears), and other micro-animals. Yet wildlife abounds in the surrounding coast and waters, including whales, seals, penguins, petrels, starfish, sea urchins and krill. This is a land of extremes.

Temperatures

Temperatures at U.S. National Science Foundation (NSF) McMurdo Station can reach as high as 8°C (46°F) during the austral summer. By comparison, U.S. National Science Foundation Amundsen-Scott South Pole Station had a record high of -12.3°C (9.9°F) in December 2011, where the mean annual temperature is -49°C (-56°F). Meanwhile, U.S. National Science Foundation Palmer Station's summer temperatures can exceed 4°C (39°F).

Daylight and Darkness

The area south of the Antarctic Circle (i.e., 66.5° south latitude) experiences one long day and one long night each year, with several weeks of sunrise and sunset in between. There are spectacular displays of aurora australis (i.e., the southern lights) in Antarctica during the austral winter darkness.

Territory

The Antarctic Treaty is now recognized by 58 countries. It reserves the region south of 60° south latitude for the peaceful conduct of research. While several nations have made territorial claims in Antarctica, they are not universally recognized, and no country maintains political possession of the continent. Treaty nations coordinate to advance research and data collection in a way that is mutually time- and cost-efficient.

Size and Distance

The Antarctic continent is roughly 14 million square kilometers (5.4 million square miles), about 4.1 million square kilometers (1.6 million square miles) larger than the U.S. excluding its coastal and territorial waters. The sea ice around Antarctica varies from 4 million to 20 million square kilometers (1 million to 7 million square miles) between summer and winter. The distance from Washington, D.C., to NSF McMurdo Station is approximately 14,830 kilometers (9,920 miles) as the crow flies.

Science

Antarctica provides excellent conditions for scientific research on global climate change, ozone depletion, ultraviolet (UV) radiation, earth sciences, glaciology, astronomy, oceanic and atmospheric circulation, marine ecosystems, meteorite studies, biology and more.

History

The history of people in Antarctica comprises remarkable stories of exploration and survival. Its existence had been hypothesized as far back as the Ancient Greeks, but the continent was not first sighted by humans until 1820, according to available historical records. Sealers briefly set foot on the Antarctic Peninsula the next year. The following decades saw several sealing and research expeditions in and around the continent, whalers first landing in East Antarctica in 1895 and explorers reaching the South Pole in 1911. Many nations since have built research stations in Antarctica, with the U.S. establishing its first year-round base in 1956, now known as McMurdo Station.

USAP Statistics

- Approximately 3,000 USAP participants work at U.S. Antarctic stations and field camps each year.
- About 90% of participants travel to the continent via New Zealand.
- Participants originate from all over the U.S., with Colorado having the highest representation.
- Approximately 75% of participants work during the summer and 25% during the winter.
- More than 700 scientists conduct research on more than 200 science projects each year in Antarctica.

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Chapter 1

The United States in Antarctica

The American connection to Antarctica traces back to 19th century sealers who hunted in the Southern Ocean and to Antarctic expeditions, diplomatic initiatives and whaling in the following years. The U.S. has had a continuous presence in the region since the 1950s and has long maintained a strong capability to support Antarctic research.



The sun begins to set at the Geographic South Pole. The geographic South Pole marker is a custom-designed stake moved to a newly surveyed position every year on January 1st. Photo: Anthony Forchione

Antarctic Exploration

Beginning in the late 1800s, Antarctica became the focus of international scientific expeditions that saw its coastline mapped, significant areas of its interior explored and numerous samples and data collected. These efforts continued through the end of World War I, in 1918, fueling scientific investigations for a number of years.

American interest in Antarctica was made salient during the 1928–1930 expedition of U.S. Navy Rear Admiral Richard Byrd, during which the base camp "Little America" was set up and multiple scientific expeditions by land and air were completed. Byrd's expedition was bookended by the First and Second International Polar Year, collaborative research



A USAP helicopter lifts a sling load of cargo (not visible) from the McMurdo Station helicopter pad. The annual sea ice of McMurdo Sound and the Royal Society Range of mountains are in the distance. Photo: George Nyfeler

efforts in both the Arctic and Antarctica, and was followed by well-resourced private and national expeditions during the post-World War II period. The International Geophysical Year (IGY) of 1957 to 1958 saw the U.S. and other nations establish permanent bases in Antarctica. IGY was a scientific project involving more than 70 countries that contributed to the continent's preservation for peaceful research under the Antarctic Treaty of 1959.

United States Antarctic Program

Since IGY, Americans have continuously conducted research in Antarctica to better understand the continent and its interactions with phenomena worldwide. This research is facilitated by USAP and the engineering, logistics, station construction and resupply support of Operation Deep Freeze, which the U.S. Navy ran for 44 years until the U.S. Air Force took over in 1999. International exploration of Antarctic land, ice and sea continues today with the help of more than 80 permanent research stations, about half of which are open year-round.

NSF's Office of Polar Programs (OPP) currently manages USAP, which was first established in 1959 as the U.S. Antarctic Research Program (aka USARP). Research supported by NSF and other U.S. federal agencies aims to expand fundamental knowledge of the Antarctic region, elicit correlations between Antarctica and the

rest of the world and leverage Antarctica as a unique research platform. U.S. science has greatly improved global understanding of Antarctica and its role in not only global environmental and climatic patterns but also the cosmic microwave background and black holes, placing the U.S. in a position of scientific and diplomatic leadership in Antarctica.

Programs to integrate research and education are important and unique elements of USAP. Among them is Polar STEAM, a science, technology, engineering, arts and mathematics program to increase public understanding of both Antarctica and Antarctic research. See Science on the Ice: The United States Antarctic Program for more information about USAP.

Antarctic Treaty and U.S. Policy

In December 1959 on the heels of IGY, 11 countries and the U.S. signed the Antarctic Treaty. It is now recognized by 58 nations that participate in consensus-based decisions about Antarctica as consultative parties. Another 29 nations have acceded as non-consultative parties that lack decision-making privileges.

The essential science being done in Antarctica is in large part thanks to the unique international governance of the Antarctic Treaty, which protects Antarctica as a place of peace, international scientific cooperation and environmental preservation. In 1998, the Protocol on Environmental Protection to the Antarctic Treaty (Antarctic-Environmental Protocol) established further rules and procedures to protect the Antarctic environment. Now more than six decades on, the treaty, protocol and other agreements, together known as the Antarctic Treaty System (ATS), remain a unique example of global cooperation.

Continued U.S. leadership and cooperation in the treaty and Antarctic science is crucial to navigating the interconnected future of Antarctica, Earth and its inhabitants. As such, U.S. policy in Antarctica is based on four core principles:

1. Non-recognition of territorial claims.
2. Retention of the right to participate in any future uses of the region.
3. Use of Antarctica for peaceful purposes only.
4. Free access for scientific investigation and other peaceful pursuits.

Under the treaty, the U.S. Department of State and its international counterparts engage in diplomatic interchanges, and leaders of national Antarctic programs coordinate logistical and operational plans via the Council of Managers of National Antarctic Programs (COMNAP). The international cooperation on plans, staffing, research and scientific data is propitiously extensive. See the Secretariat of the Antarctic Treaty website for more details about the ATS.



A USAP participant stands next to a welcoming sign for Williams Airfield. The airfield only accommodates ski-equipped aircraft and primarily is used in the months of December and January. Photo: Brian Bezalel

USAP Structure

U.S. National Science Foundation

OPP has day-to-day responsibility for the following U.S. activities in Antarctica overseen by NSF:

Annual Budget: Preparing operational plans for consideration by the U.S. Executive Branch and for review and appropriation by U.S. Congress.

Scientific Consultation: Consulting the scientific community to develop goals for NSF-supported research in Antarctica.

Proposal Evaluation: Supporting proposals for research and education by U.S. universities, research institutions and other U.S. federal agencies.

Logistics Planning: Detailed planning and dissemination of logistical requirements, along with necessary funds, to elements of the U.S. Department of Defense (DoD) and U.S. Coast Guard (USCG).

Facilities Management: Planning, design, engineering, construction and maintenance of Antarctic infrastructure.

Contractor Management: Developing a government support contract and managing prime contractors charged with operating Antarctic stations and providing related services.

Program Development: Developing and implementing a comprehensive environmental, safety and health program for U.S. activities in Antarctica.

International Collaboration: Arranging cooperative scientific and logistics programs with other Antarctic Treaty nations.

Delegation: Designating a senior U.S. representative in Antarctica and ensuring on-site management of field programs in Antarctica.

Recordkeeping: Serving as a clearinghouse and source of information for Antarctic records, files, documents and maps maintained within agencies and non-governmental organizations (NGOs).

Contractors

Leidos, Inc. is currently the prime contractor supporting USAP under the Antarctic Support Contract (ASC). Leidos also subcontracts teammate companies that perform operations and science support functions. ASC's scope of work includes the following:

- Supporting funded science projects and operating research facilities.
- Purchasing, shipping, warehousing and issuing equipment and supplies.
- Designing, procuring and constructing facilities.
- Operating and maintaining Antarctic stations and field camps.
- Arranging medical clearance and travel for participants.
- Managing transportation of passengers and cargo.
- Providing marine terminal operations.
- Ensuring compliance with environmental, safety and health requirements.

U.S. Department of Defense

DoD provides logistical support to USAP that is reimbursed by NSF, as directed by Presidential Memorandum 6646 and the NSF–DoD memorandum of agreement. This support includes the following:

- **Air Mobility Command (AMC):** C-17 airlift between Christchurch, New Zealand (NZ), and McMurdo Station.
- **Commander 13th Air Expeditionary Group (13 AEG/CC):** Typically from McMurdo Station, directing all DoD aviation operations.
- **Commander Joint Task Force-Support Forces Antarctica (CJTF-SFA):** Typically from Joint Base Pearl Harbor-Hickam, oversight of DoD forces deployed under Operation Deep Freeze.
- **Deputy Commander Joint Task Force (DCJTF):** Typically from NZ, Antarctica or Hawaii, execution of the DoD mission and

managing DoD assets on behalf of CJTF-SFA and occasionally acting as 13 AEG/CC.

- **Military Sealift Command (MSC):** Ship-borne cargo and bulk fuel delivery to McMurdo Station.
- **Naval Information Warfare Center Atlantic (NIWC) Polar Programs:**
  - Weather forecasting, air traffic control, ground-navigation-aid maintenance, radio frequency spectrum management and DoD messaging.
  - Information security / information assurance management and government oversight support.
  - Electronic systems engineering, including design, procurement and installation.
- **Navy Cargo Handling and Port Group (NAVCHAPGRU):** Stevedore services.
- **New York Air National Guard (NYANG) 109th Airlift Wing:** LC-130 Hercules (ski-equipped) airlift between Antarctica and NZ and within Antarctica.

U.S. Department of Homeland Security

Under the U.S. Department of Homeland Security, USCG provides icebreaker services that are reimbursed by NSF. These services include the following:

- Breaking a channel through the sea ice of McMurdo Sound and escorting supply ships into and out of McMurdo Station.
- Providing other assistance as required.

U.S. Department of the Interior

The U.S. Department of the Interior's Office of Aviation Services provides procurement assistance, contract administration and inspections for commercial aircraft providers contracted with USAP. The U.S. Geological Survey (USGS) holds geodetic data that support mapping of Antarctica and administers Antarctic place-name decisions.

U.S. Department of State

The U.S. Department of State is responsible for formulating and advising on U.S. foreign policy in Antarctica. This includes conducting Antarctic foreign relations, adjudicating legal matters related to Antarctic Treaty interpretation and implementation, and leading the U.S. delegation to the annual Antarctic Treaty Consultative Meeting (ATCM), where Antarctic issues are discussed. The State Department also advises treaty nations of non-governmental expeditions to Antarctica that are organized in or proceed from the U.S., consulting with NSF and the U.S. Environmental Protection Agency (EPA) on whether expedition organizers are subject to U.S. environmental regulations.

National Organizations

National organizations across the globe work together to facilitate Antarctic science. These include national Antarctic programs, of which USAP is one, and the Scientific Committee on Antarctic Research (SCAR), a United Kingdom-based unit of the International Science Council. SCAR is an NGO that facilitates high-quality Antarctic and Southern Ocean research, organizes symposia, prepares annual reports for scientific information exchange and advises the ATCM, among other things. The National Academy of Sciences' Polar Research Board appoints the U.S. representatives to SCAR.

Science Proposal and Grants

OPP's mission is to promote and support excellence in scientific research and education about the Arctic and Antarctica, in accord with national policies. OPP's Section for Antarctic Sciences receives funding proposals from scientists to conduct Antarctic research, which are peer-reviewed to inform Antarctic science program directors, who determine which proposals are most meritorious. The NSF website provides additional information about NSF goals, strategic plans, budgets and activities. The "Find Funding" tab links to searchable databases of grants opportunities and previous awards.

Antarctic Data Repositories

The following are critical repositories of Antarctic data. Additional information on repositories and data resources is available on the OPP website.

Antarctic Metadata Directory (AMD)	Serves as the largest collection of Antarctic dataset descriptions in the world.
Antarctic Meteorological Research and Data Center (AMRDC) Repository	Provides real-time and archived meteorological data and observations and supports a network of automatic weather stations in Antarctica.
Biological and Chemical Oceanography Data Management Office	Contains data on biological, chemical and biogeochemical research conducted in coastal, marine, Great Lakes and laboratory environments, including Antarctica.
COLD Database	Contains content from Permafrost Monthly Alert, Antarctic Bibliography, and Bibliography on Cold Regions Sciences and Technology.

Geodetic Facility for the Advancement of Geoscience	Provides access to data to quantify the motions of rock, ice and water that are monitored at or near the Earth's surface.
Marine and Geology Repository	Contains oceanic sediment cores and marine rock specimens, including cores of the Antarctic Marine Geology Research Facility.
NSF Ice Core Facility	Stores, curates and studies meteoric ice cores recovered from glaciated regions.
Polar Geospatial Center	Provides geospatial support and data products to the polar science community.
Polar Rock Repository Database	Contains rock samples from Antarctica and the southern oceans plus field notes, maps, thin sections and a media archive.
Reference Elevation Model of Antarctica	Provides a high-resolution (2-meter) digital terrain map of nearly the entire continent of Antarctica, for use in GIS and remote sensing.
Seismological Facility for the Advancement of Geoscience	Provides seismological and other geophysical research data and data products.
USAP Data Center	Collects datasets and descriptions of datasets from all USAP projects, which are shared with the AMD.
USGS Library	Provides access to Antarctic information housed in the former U.S. Antarctic Resource Center.

USAP Stations

USAP has three permanent, year-round research stations: NSF McMurdo Station, NSF South Pole Station and NSF Palmer Station. Additional temporary field stations are constructed and operated during the austral summer.



McMurdo Station, located next to the Ross Sea and the Ross Ice Shelf, is the southernmost port on Earth. Photo: Elaine Hood

McMurdo Station

McMurdo Station is named after Archibald McMurdo, a lieutenant on the British naval ship HMS Terror, which along with the *HMS Erebus* was commanded by James Clark Ross during a 1839–1942 Antarctic expedition. The station itself was established in December 1955 and opened in February 1956. It is situated on bare volcanic rock at the southern tip of Hut Point Peninsula on Ross Island (Fig. 2.2-2), the southernmost solid ground accessible by ship. McMurdo Station has staged logistics and science for USAP since IGY of 1957–1958 and serves as a central hub for research on the continent and onward to the South Pole Station.

The location of McMurdo Station is ideal due to its proximity to open water and stable sea ice. The station's two airfields on the McMurdo Ice Shelf nearby facilitate work further afield. Williams Field has two skiways and supports skied aircraft, while Phoenix Airfield has a compacted snow runway to support heavy-wheeled aircraft except during the warmest months. The station is within a helicopter's ride from the Dry Valleys and scientifically important areas on Ross Island, such as Mount Erebus, Cape Crozier and Cape Royds. When the sea ice in McMurdo Sound condenses, many sites around Erebus Bay are accessible by snowmobile and other light vehicles.

McMurdo Station also serves as the primary logistics facility for airborne and overland resupply of inland stations and field science projects, as well as the waste management center for much of USAP. Approximately 90% of USAP participants in Antarctica reside in or

pass through McMurdo Station, whose population ranges from 800–1,000 in the summer season (October–February) to 120–200 in winter (March–September). The station has routine weekly flights to and from NZ in summer, which includes the large personnel and cargo movement effort in October and November known as Mainbody, with less frequent flights in winter.

Albert P. Crary Science and Engineering Center

The Albert P. Crary Science and Engineering Center (Crary Lab) serves as the primary laboratory and research facility at McMurdo Station, supporting scientists across a range of disciplines that include biology, geology, physics, chemistry and system sciences. The facility is named after the geophysicist and glaciologist Albert Paddock Crary (1911–1987), the first American to reach both the North Pole and South Pole.

Crary Lab has more than 4,320 square meters (46,500 square feet) of working space and provides researchers with general-use consumables, glassware, equipment, instrumentation, chemicals, cryogens, cold storage, laboratory materials and personal protective equipment (PPE). Deploying science teams must bring their specialized gear and PPE to McMurdo Station.

The south side of Phase I of the lab provides a library, shared-use computers, conference rooms, administrative and staff offices, shared equipment rooms, a cargo receiving area and equipment/material storage areas. The north side houses laboratories for biology and chemistry work; microscope rooms with light, petrographic and fluorescent scopes; office spaces; environmental and walk-in freezer rooms; and a staging area with a carpentry workbench. Phase II (on both the south and north sides) has laboratory space for physics, geology, glaciology and engineering work; staging areas; cold rooms for ice core work; and office spaces, including the information technology (IT) office. Phase III contains aquarium tanks, a flow-through seawater system and wet laboratories designed to support live animal work and predeployment testing of marine equipment and submersible robotics.

Facilities engineers, IT support personnel, materials and supply specialists, lab supervisors, a hazardous materials (hazmat) specialist, a research associate and an instrument technician at Crary Lab assist scientists at McMurdo Station each year. Lab staff also allocate and distribute resources and ensure scientific operations comply with safety, environmental and health requirements. Researchers are expected to arrive at McMurdo Station trained in their respective disciplines or accompanied by a team member who can provide guidance.

The lab features science posters and displays, and the McMurdo community is encouraged to visit the facility to learn more about USAP-supported research. During the summer season, lab staff provide Sunday tours, researchers give science lectures up to twice a week, and other science engagement events take place.



Amundsen-Scott South Pole Station, located at the geographic South Pole, is home to more than 150 U.S. Antarctic Program personnel in the austral summer. Photo: Mike Lucibella

South Pole Station

Norwegian explorer Roald Amundsen and his four crewmembers had been the first to reach the South Pole, in December 1911. They were followed weeks later by British Royal Navy Captain Robert Falcon Scott and his crew of four, who died on their March 1912 return to Cape Evans amid injuries and bad weather. The South Pole went untouched by humans until November 1956, when 18 U.S. Navy crewmembers began construction on the first Amundsen-Scott South Pole Station to support research during IGY. This also led to their distinction as the first persons to winter-over at South Pole.

The current elevated station at South Pole was completed in 2008 and provides housing, dining, recreation and medical services for about 150 research and support personnel in summer and 50 in winter. The original station is now known as “Old Pole.”

Today, South Pole Station and the adjacent area host complex astrophysics telescopes, seismic instruments, a massive in-ice detector for neutrinos, an atmospheric observatory and large-scale scientific experiments. The low temperatures that can approach -73°C (-100°F) in winter, near-zero humidity and 2,835-meter (9,300-foot) elevation on the high Antarctic plateau make the air especially transparent on certain radio frequencies at South Pole, where months of winter darkness allow sensitive equipment to run continuously. The research conducted here ranges from astronomy, astrophysics and aeronomy, to auroral and geospatial science, meteorology, geo-



A view of Palmer Station, located on Anvers Island, along the west side of the Antarctic Peninsula. In the distance is the Marr Ice Piedmont glacier. Photo: Ben Rosen-Filardo

magnetism, seismology, earth-tide geophysics and glaciology.

South Pole Station also serves as a logistical hub, providing access to East Antarctica. November sees the start of an enormous effort to resupply the station with personnel, cargo and up to 450,000 gallons of fuel to keep station and science operating for a full year. Most months, it is physically impossible to reach South Pole. During the summer season, USAP personnel typically arrive via ski-equipped aircraft from McMurdo Station, while cargo and fuel are transported via overland traverse.

Palmer Station

American sealer and explorer Nathaniel Brown Palmer was among the first persons in 1820 to sight Antarctica, namely the Antarctic Peninsula, according to available historical documents. The first Palmer Station, now a historic structure, was built in 1965 on Amsler Island. Today, the year-round research station resides on Anvers Island, off the west coast of the Peninsula. It comprises two main buildings and dozens of smaller structures that provide year-round housing and research facilities for scientists and support personnel. It is also home to a concrete pylon pier, completed in 2022, that enables a range of vessels to dock at the station.

Palmer Station is the only USAP station north of the Antarctic Circle, hosting a population of roughly 40 persons in summer and 20 in winter. The station is usually accessible year-round by ice-class vessels, which provide personnel-turnover, station-replenishment and waste-removal support from Punta Arenas, Chile, by way of the Strait of Magellan, past Cape Horn, then directly south across the Drake Passage to Anvers Island. The entire journey usually takes 4 days though sea ice and storms can make the journey rougher and longer.

Palmer Station's Mary Alice McWhinnie Laboratory, named after the first woman scientist to work at the station, houses seawater aquariums and a range of equipment to support biological sciences research, particularly of birds, seals and marine ecosystems. (Flora and fauna are comparatively sparse in Antarctica's interior.) The station also supports climate, meteorology, aeronomy, geospatial science, marine geology and glaciology research. The Terra Lab supports atmospheric studies, as well as radionuclide monitoring as part of the Comprehensive Nuclear-Test-Ban Treaty Organization's (CTBTO's) International Monitoring System.

Facility Administration

NSF Representative	Each summer, the OPP director designates a senior U.S. representative in Antarctica (NSFREP), whose office is in Building 165 (BL165) at McMurdo Station. The NSFREP ensures that U.S. policy and directives for USAP are implemented, represents the U.S. as it interacts with foreign nations in Antarctica, ensures U.S.-sponsored Antarctic activities are carried out in a manner consistent with the Antarctic Treaty and takes appropriate action in personnel matters not subject to military or other authorities. The NSFREP serves as NSF's principal representative for implementing planned field operations, coordinating on-site priorities for USAP activities.
NSF Science Representative	The NSF science representative (SCIREP) serves as NSF's principal representative for Antarctic science activities. The SCIREP interacts with investigators and the NSFREP to set science support priorities, gives on-site direction to the ASC laboratory services manager on science matters and serves as the NSF science spokesperson.

NSF Station Manager	The NSF station manager oversees USAP operations year-round and serves as a special deputy U.S. marshal. The NSF station manager interacts with all organizations represented at McMurdo Station and manages emergency situations. During winter, they are the ranking U.S. government official in Antarctica.
Commander Joint Task Force-Support Forces Antarctica	The CJTF-SFA is responsible for all DoD personnel and material assets that support USAP, typically operating from Joint Base Pearl Harbor-Hickam.
Commander 13th Air Expeditionary Group	The 13 AEG/CC is the designated commander of all military forces deployed to Antarctica as part of Joint Task Force-Support Forces Antarctica (JTF-SFA) and occasionally serves as the DCJTF.
ASC Area Manager	ASC has an area manager at each of the three USAP stations who, along with the senior ASC representative, oversees all contractor support activities. The ASC area manager may be supplemented with a site manager during the summer, based on the station and scheduled workloads, while winter site managers serve as area managers during winter.
Station Science Leader	NSF designates a science leader for South Pole Station and Palmer Station. The station science leader directly reports to OPP when no NSF representative is present. Researchers at each station or working out of the station are responsible to the station science leader, who coordinates science projects and arranges for science-support logistics. In winter, researchers request support from the station science leader, who consults with the station or site manager to arrange it. The station science leader clears official messages concerning research projects before they are dispatched.

Chapter 2

Before You Leave Home

You will travel through at least one foreign country before landing in Antarctica. Planning is essential to not only getting to the continent in the first place but also how well you perform and re-energize in this austere, remote environment with few conveniences. Read on for critical information about your background and medical evaluations, travel documents, equipment, finances and more. Contact your supervisor, science team leader or POC with any questions.



A pair of Adelie penguins at Cape Royds overlooking McMurdo Sound. The Transantarctic Mountains can be seen in the distance.
Photo: Mike Lucibella

Program Requirements

Background Investigation

NSF is responsible for completing U.S. federal background investigations of all contractors working within USAP. It is vital that persons undergoing investigation immediately respond to all inquiries from the NSF Personnel Security and Suitability team or ASC Personnel Security team. A favorable determination is required for contractors to deploy to Antarctica. Any delayed responses or missing information will put that deployment at risk.

Physical Qualification

USAP participants must pass a rigorous physical qualification (PQ) before going to Antarctica. Each USAP research station has a clinic that can provide routine ambulatory services comparable to a U.S. urgent care facility. But there is limited capability to stabilize and manage serious medical and dental conditions, which often require costly medical evacuations (medevacs) that pose risks to both patients and responders and divert resources from other USAP operations. The extreme weather can also make obtaining healthcare or a medevac difficult to impossible, as can the remoteness of Antarctic field camps. ASC administers the PQ process to reduce such risks in Antarctica.

The PQ process applies to all grantees, ASC and NSF employees, contractors, military personnel and guests of NSF. The U.S. will accept the PQ determinations of some other national Antarctic programs. If you are not a U.S. citizen or permanent U.S. resident, contact your hiring manager or NSF program director to determine the process you must follow. A PQ under USAP is also valid for deployment with the U.S. Arctic Sciences program.

Deployment clearance begins when ASC is notified of your candidacy to deploy to Antarctica (e.g., via the Support Information Package (SIP) for grantees or hiring paperwork for contract employees). The University of Texas Medical Branch (UTMB) Center for Polar Medical Operations in Galveston, Texas, sends you an email containing a PQ packet with NSF Form 1700 (covering medical history, labs, and physical and dental exams) and details on how to complete the PQ requirements and submit documentation online.

The PQ process can change as new health data or treatment options arise. Complete only the labs identified in your packet, even if you completed different lab tests in a previous deployment. USAP will reimburse you only for the tests and exams indicated in your PQ packet. Do not allow your healthcare provider to add tests to this lab order. If they believe additional testing is necessary, they must submit a separate order billed to you or your insurance provider.

The information enclosed in the PQ packet will answer most of your questions about scheduling exams and submitting information to UTMB. Contact your POC for further assistance. UTMB contact information is also provided in your PQ packet.

ASC Employees

ASC employees who have health insurance should submit medical expenses (e.g., for physical or dental exams) to their insurance first. ASC will reimburse employees for approved out-of-pocket expenses. ASC subcontractors must submit receipts to their hiring company (e.g., Amentum, GSC, Six Mile). ASC employees are required to use Labcorp for testing. Those living more than 50 miles from the closest Labcorp facility should contact UTMB to have a Labcorp collection kit mailed to them, then take the kit to a local lab to have the labs drawn.



The Ceremonial Pole at the South Pole is surrounded by the national flags of the countries which were the first to sign the Antarctic Treaty. Photo: Devon Stross

Grantees

Grantees should submit medical expenses to their insurance before seeking reimbursement from their NSF grant, consulting with their principal investigator (PI) for specific steps in the process. . Grantees are strongly encouraged to utilize Labcorp for testing and utilize the direct-bill option to ensure the correct labs are ordered and results are sent directly to UTMB. Treatments to resolve medical or dental conditions to meet USAP screening criteria are not reimbursable.

Candidates can submit their completed PQ documentation to UTMB via mail, fax or Box, an approved, secure online system. Do not email documents to UTMB. If your medical provider has questions about any of the exams, direct them to the "Dear Doctor" or "Dear Dentist" letter in the PQ packet. Providers may also contact UTMB directly.

Candidates are responsible for scheduling their examinations so all PQ information is provided to ASC no more than eight weeks after they receive the PQ packet and at least 16 weeks before they are scheduled to deploy. Start the process as early as possible in case additional testing is required. Check that the information you submit is complete, and submit it early to allow time for any follow-ups.

All medical information, lab results, X-rays, dental exams, releases and personal information submitted to UTMB are the property of USAP and will not be returned to the candidates. UTMB cannot provide copies of these records. Make copies of all the information or documentation you submit for your own files.

Waivers

If you do not meet USAP's PQ criteria, you will be notified of your not physically qualified (NPQ) status. The notification details how to request a waiver for the disqualifying issue(s). Be aware that any testing or treatment required to attain an NPQ waiver is not reimbursable. The waiver process triggers NSF review of your case and can take up to eight weeks. If the process is not complete in time for your scheduled deployment, your position may be offered to an alternate. NSF makes the final waiver decision.

Immunizations

Your PQ packet identifies the immunizations required before you deploy. If you plan to conduct personal travel after leaving Antarctica, additional immunizations may be required or recommended. (Consult your physician or the US Centers for Disease Control and Prevention for guidance.) Ensure you obtain any travel-related vaccines or medications (e.g., malaria chemoprophylaxis) before deploying to Antarctica, and take them to the station clinic upon arrival on continent. Any vaccinations will be administered to you at the end of the season.

No immunizations are required for your return to the U.S. Other countries may require international certificates of vaccination against yellow fever and other infectious diseases.

Privacy Act Compliance

All medical information that NSF or its contractor gathers from you is maintained in accordance with the "Privacy Act of 1974" (P.L. 93-579). NSF's authority to collect medical, dental and psychological information arises from its authority to prescribe rules governing its operations, as set forth in 42 U.S.C. § 1870(a). Failure to provide this information may result in your being disqualified from deploying with USAP.

Deployment Documentation

Once you have PQ'd, you will receive an email advising that you have been identified as a USAP participant (or alternate). In the following weeks, you will receive an email with a link to your deployment packet. Review this packet carefully. It includes forms to complete and return to ASC Travel and information you must know before arriving in Antarctica.

Travel Arrangements

ASC Travel begins work on your ticketing and itinerary early in the qualifying process. You may be consulted in advance to establish your deployment date, but your itinerary and tickets will not be released to you until you have done the following:

- Completed the PQ process and attained medical approval to deploy.
- Completed and signed all deployment packet documentation and returned it to ASC Travel.
- Completed the elevated background investigation (EBI) and received approval to deploy, if applicable.
- Evidence you have obtained any necessary visas, if applicable.

You will pass through NZ, Chile or other countries while traveling to Antarctica, via airline tickets provided by USAP. The "International Air Transportation Fair Competitive Practices Act of 1974" requires the use of U.S. carriers for USAP-supported travel. ASC Travel reserves, purchases and issues your tickets for direct air travel from your home airport to NZ or Chile. This information is taken directly from the travel paperwork you submit. Advance authorization from an NSF program manager or ASC management is required for any deviations from the direct route. To get the best fare, airline tickets are purchased at least three weeks prior to the flight.

For grantees, every effort is made to obtain flight dates as requested, but this is not always possible. When ASC sends your ticket information, check the flight times and dates. Also, ensure the passenger name on your tickets matches the name on your passport (i.e., do not use a nickname on your tickets). If your tickets have any discrepancies, contact ASC Travel immediately.

Note: Southbound trans-Pacific flights to NZ lose a calendar day as they cross the International Date Line. A Tuesday flight from the U.S. would arrive Thursday in NZ, while a Wednesday flight out of NZ would arrive in the U.S. the same day.

Your airport of departure (AOD) is the location you designate as your residence on your deployment paperwork or SIP, and it is the city you will be returned to post-deployment.

Travel Expenses

ASC Employees

If you have any questions about reimbursing your expenses, contact your company's Human Resources (HR) or Finance department before you deploy. Take receipts for any previously unreimbursed expenses with you to Antarctica, and complete your expense reimbursement there. Your employer will advise you of any additional requirements. U.S. federal employees and contractors supporting other federal agencies should discuss their travel plans with their agency's travel office.

Grantees

Your PI or team leader can advise you about the expenses covered by your grant and any special training or meetings that may be required.

Meals and Lodging in Antarctica

Meals and lodging are provided at no charge to USAP participants at all USAP stations, aboard commercial vessels to Palmer Station and at field camps. If you are traveling with foreign expeditions or private operators, you may have to pay meal charges aboard their ships.

Food service at all USAP stations is cafeteria style. There is no portion limit. To minimize food costs and waste, take only what you will eat and eat all of what you take. A variety of food is offered every day. People with severe dietary restrictions or significant food allergies will have limited choices. Gluten-free, vegetarian and vegan menu items are often available but not guaranteed. See Chapter 6 for details by station.

Passports, Visas and Permits

U.S. citizens must possess a valid passport. Obtaining a passport is the individual's responsibility and typically takes at least six weeks. Go to the U.S. Department of State's Travel website for information on how to apply for or renew a passport and for country rules on how long the passport must be valid. Some airlines require that your passport be valid for at least six months beyond your planned stay. Ensure your passport will not expire while you are overseas.

Note: If you are a U.S. federal employee, your agency must obtain an official passport for you by contacting the State Department. Holders of these official passports (as opposed to ordinary passports) may be subject to extra visa requirements when traveling abroad.

Keep a photocopy and digital photo of your passport (including pages containing visas) in case you lose your passport while traveling. The Christchurch Travel Office can help with replacing passports lost in NZ or Antarctica. ASC's South America agent, Maersk, can help participants based in the Antarctic Peninsula.

Participants who are non-U.S. citizens should become familiar with the visa requirements of each country they intend to visit. (Consult the country's embassy website for details.) Obtain any necessary visas before leaving your home country to avoid travel issues and delay.

USAP does not pay for visas required for entry. However, USAP does pay for the New Zealand Electronic Travel Authority (NZeTA) that is required to enter NZ when you are on official USAP travel.

If your NZ or Chilean visa application requires a letter confirming your participation in USAP, contact ASC Travel, which will provide the required documentation. For a list of countries whose citizens do not require a visa to enter NZ or Chile, consult Immigration New Zealand's (INZ's) website or the U.S. Embassy in Chile's website, respectively.

New Zealand



ASC will provide all ASC-ticketed participants with an official letter requesting a 12-month Antarctic Traveller Visitor Visa. To receive the visa, you must speak with an immigration officer in NZ. Do not use the e-gates. If you are traveling to NZ on a red government passport (i.e., one issued for U.S. federal employees traveling on behalf of their government), a visa is not required to travel through NZ. You are responsible for ensuring you receive a 12-month visa when you arrive in NZ.

Additionally, U.S. citizens must have an approved NZeTA before departure. Since October 2019, an NZeTA has been mandatory for all U.S. tourists heading to NZ for short stays. In most cases, the USAP Christchurch office will apply for NZeTAs on participants' behalf. Select agencies or travelers who do not fill out or return a deployment packet to ASC Travel and arrange their own transportation to NZ will need to apply for their own NZeTA via INZ's website or app.

Be aware that INZ records the total time spent in both NZ and Antarctica as time spent in NZ. See Chapter 5 for more information.

Route Through Australia

USAP participants with a U.S. passport who have been ticketed by ASC and routed through Australia to NZ do not need a visa if they remain inside the Australian airport's international terminal. If you plan to leave the airport or conduct leisure travel through Australia, or if your layover is more than 8 hours, you must apply and get approved for a Subclass 601 Electronic Travel Authority (ETA). ASC Travel will provide information on how to apply for an ETA via the Australian Department of Home Affairs website or ETA app.

Chile



If you will be traveling with a U.S. ordinary passport, you do not need a visa to enter Chile. Holders of U.S. official passports will require a visa, which is available from the Embassy of Chile 1732 Massachusetts Avenue N.W., Washington, D.C. 20036. Send a letter to the embassy stating the purpose of your visit, and enclose your passport and a return envelope. Contact the embassy at 202-785-1746 for more information.

Sea Travel

If you are embarking or disembarking a ship in the Port of Hobart, Australia, you must obtain a Subclass 988 Marine Crew Visa (MCV) before you arrive. The application can take 5–30 days. ASC Travel can assist in this process.

Non-U.S. Citizens

Foreign nationals residing in the U.S. are responsible for obtaining the appropriate visas before departing for Antarctica. Contact the embassy of the country through which you will travel for information. Allow up to eight weeks for a visa to be processed. No tickets will be purchased until visas are obtained and proof is provided to ASC Travel.

If you are not a U.S. citizen, you will need a two-entry visa for NZ or South American countries through which you will pass, one for initial entry and one for return from Antarctica. It is your responsibility to confirm requirements with an official of your country well before the planned departure. USAP will not act on your behalf.

Immigrants who are U.S. residents must consult with the U.S. Citizenship and Immigration Service to determine if any regulations govern their absence from the U.S. Lack of compliance with regulations can lead to loss of accrued residence time benefits that apply toward citizenship or reentry. A new U.S. visa can take several months, require a visit to the consulate or may not be issued at all.

If you are a foreign national not residing in the U.S. and will travel to the U.S. post-deployment, review the U.S. State Department's Visas webpage for visitor and student visa requirements.



Participants check in for their flight to McMurdo Station at the passenger terminal in Christchurch, New Zealand. Photo: Peter Rejcek

Customs

While in transit through foreign countries, your luggage will be inspected by customs officials and may be screened by dogs trained to detect controlled substances and agricultural products. Thorough luggage and body searches are routinely conducted by customs authorities at the time of entry.

Importation and possession of controlled substances without prescriptions, marijuana, weapons (especially firearms and switchblade knives), pornography, and certain animal/agricultural products without special approval are strictly prohibited when entering NZ and Chile. In NZ, violators will be instantly fined NZ$400 or more. Transportation of the above-mentioned items aboard U.S. military vessels and aircraft is also prohibited by U.S. law.

NZ has strict limits on what may and may not enter the country. Items are restricted if they are known to carry pests or diseases that could endanger native plants and animals. Travelers must declare all restricted items when entering NZ. Restricted items will be examined on arrival and, if found to comply with current requirements, will be permitted to enter. People who knowingly bring restricted items into NZ without declaring them will be prosecuted and subject to severe and immediate penalties. See the New Zealand Customs Service website for more information.

NZ Customs requires that prescription drugs be hand-carried and not placed in checked baggage. Carry a copy of each prescription pro-

vided by your personal physician. See Chapter 3 for more information.

There are also limits on the quantities of tobacco and alcohol that can be brought into many countries. See the following websites for customs regulations:

New Zealand: www.customs.govt.nz

Chile: www.aduana.cl

Australia: www.abf.gov.au

If you plan to carry any single item worth more than US$1,000, excluding personal items such as laptops and cameras, indicate that on the Trip Details form in the deployment packet you receive from ASC. ASC does not provide personal property insurance.

Your Equipment

All scientific and technical equipment should be shipped from the U.S. or Antarctica as cargo. Cargo is designated "NSF" and exempt from duty and taxes. If you decide to ship or carry technical equipment to Antarctica through another country as accompanied baggage, you must prepare in advance to avoid two possible costs: (1) paying import duties or posting bond to a foreign country, even though your equipment is only transiting through it; and (2) paying duties when you bring the equipment back into the U.S. There are several methods of protecting against payment of unwarranted duty. Payment of duty will not be reimbursed.

Registry with U.S. Customs and Border Protection	Before leaving the U.S., you can register scientific and technical equipment (e.g., cameras, personal computers, spare parts) with U.S. Customs and Border Protection by completing CBP Form 4457 and presenting it to a customs officer, along with the equipment and serial numbers being registered, at the airport. Prepare a list of items with serial numbers and appropriate documentation before arriving. If you do not have a receipt for an item or it was a gift, Customs will determine its value. Registering your items will ease reentry into the U.S. For any additional information, contact U.S. Customs at any U.S. international airport.
Letter From Your Institution	When carrying scientific equipment as accompanied baggage, list it in a letter on your institution's stationery along with a statement that the material will be used for research under USAP. Keep the list with the material to ease clearance through customs in Argentina and Chile. This letter is not sufficient for transiting through NZ, which has additional requirements.

Temporary Import to NZ	Grantees, contractors and other visitors carrying high-tech and scientific equipment (excluding laptop computers) as part of their luggage must carry an NZ Customs form that lists the equipment and its value and states the items (1) will not be left, sold or disposed of in NZ without the written permission of NZ Customs and (2) will be exported from NZ within 12 months of their first landing. Appropriate forms must be obtained from ASC Travel in Centennial, Colorado, (aka the Denver facility) before you depart for NZ. Contact ASC Travel for the forms.
ATA Carnet	Visitors from the media and other non-grantee organizations are not issued NSF letters for their professional equipment. To avoid paying customs duties, anyone carrying professional equipment (e.g., cameras, recording devices) to Antarctica must have an Admission Temporaire – Temporary Admission (ATA) Carnet. NSF representatives will not assist with obtaining a carnet or pay your customs duties. It is critical to obtain the carnet before you leave for Antarctica. If you have one, you do not need to register items with U.S. Customs. The U.S. Council for International Business (USCIB) oversees the ATA Carnet process in the U.S.

Personal Matters

Take care of your personal affairs before leaving for Antarctica, where doing so will be difficult. Also designate someone you trust as your representative in your home country. Because mail delivery to Antarctica is not always reliable or timely, do not forward your mail or change your address to Antarctica. You will be able to communicate with your home representative by phone and email.

Power of Attorney

You may wish to establish a general or special power of attorney before leaving home. Consult a lawyer before doing so. A general power of attorney permits your agent to act for you in ordinary business and commercial transactions (e.g., endorse and write checks, sign documents and bills of sale on your behalf). A special power of attorney restricts the agent's authority to only the functions specified (e.g., only to sell a particular vehicle for not less than a stated price).

Some institutions, such as banks, may not accept a power of attorney and will instead require you to make special arrangements



A laboratory technician takes a minute to jump rope for exercise on the deck of a research vessel. Photo: Mike Lucibella

with them before others can act on your behalf (e.g., to withdraw your funds). Individuals may be reluctant to communicate with your agent under a general power of attorney if the authority for a particular transaction is not specifically set forth or if your agent's authority is otherwise in doubt.

A power of attorney automatically expires at the time of your death and defers to information contained in your will. A will ensures the distribution of your estate as you desire. You are urged to have a will prepared before you deploy to Antarctica.

Notary Services

There are no in-person notary services in Antarctica, and USAP telecommunications may not support remote online notary services. Therefore, assume you will be unable to execute or revoke legal documents requiring notarization while deployed to Antarctica. Settle legal matters before leaving.

Absentee Ballot

If you wish to vote in any U.S. local, state or federal elections by absentee ballot, you must arrange to receive an absentee ballot from your election authorities. However, due to uncertainties of mail delivery to and from Antarctica, you may not receive the ballot in time to vote or the election authorities may not receive your ballot in time to be counted.

Voting regulations are frequently updated. Current information for U.S. citizens interested in voting from overseas can be found on the Federal Voting Assistance Program website. Be sure to check the absentee voting requirements of your home precinct before you leave for Antarctica.

Personal Finances

Paychecks are not sent to Antarctica. All employees are required to have a U.S. bank account for the electronic direct deposit of payroll funds. ASC employees should refer to the paperwork received from their employer for detailed information about travel funds, marine compensation and other pay-related issues.

When you deploy, take enough money with you to meet all eventualities. You should plan to have a minimum of US$500 for your trip to Antarctica. This amount will vary by personal spending habits, length of stay and travel delays. Ensure you plan for the purchase of personal items (e.g., soap, toothpaste, souvenirs) in Antarctica. Most foreign banks will not cash personal checks or cashier's checks drawn on your home bank. Neither NSF nor ASC representatives in NZ will advance funds or accept a personal check.

McMurdo Station and Palmer Station are 100% cashless and checkless, so bring a debit or credit card. South Pole Station currently accepts cash only but will transition to a fully cashless, card-only system on January 1, 2027. International credit cards (e.g., MasterCard, Visa) are generally accepted in NZ and South American countries. Ensure that your debit and credit cards do not expire while abroad. Before leaving home, notify your banks that you will be traveling internationally.

Banking in NZ



NZ banks will exchange U.S. currency. You can also withdraw funds from banks using your credit cards if you have previously established a personal identification number (PIN) with your bank. ATMs marked with "Plus" or "Cirrus" (located in both the Auckland and Christchurch airports) accept credit cards with a PIN, as well as debit cards.

Banking in Chile



In Santiago, currency exchange is available only at the international terminal (not the domestic terminal). ATMs are located throughout the airport, but there may not be time to exchange money between your arrival in Santiago and your departure to Punta Arenas. However, U.S. currency can be used for taxes and fees. Banks in Punta Arenas are closed half of the day on Saturday and all day on Sunday, so plan accordingly. There are ample ATMs throughout Punta Arenas. ATMs marked with "Plus" or "Cirrus" accept credit cards with a PIN, as well as debit cards.

Joint Bank Accounts

If funds need to be drawn from a bank account while you are in Antarctica, you may wish to have the account established jointly with another person to permit the other person to withdraw the funds as required. The joint tenant of the account can legally withdraw any and all funds.

Debt Payments

Arrange for the regular payment of insurance premiums and any other term debts that you may have while in Antarctica. Mail service to McMurdo Station and Palmer Station during the austral winter is limited and unavailable at South Pole Station from February to November. Mail delivery to all stations in the summer is erratic. Do not rely on the mail service to pay bills from Antarctica. See Chapter 6 for more information.

Income Tax

U.S. federal and state income taxes are withheld from the paychecks of ASC employees. It is each U.S. citizen's responsibility to ensure their income taxes are filed each year. For federal income tax returns, you may request a filing extension from the Internal Revenue Service (IRS). However, the IRS charges interest on past-due taxes.

You can file income taxes online, or if you have arranged for someone to have a special power of attorney, they may file for you. The IRS has forms for this purpose, or you may have a lawyer draw up the document. Remember that if your agent fails to file your taxes, you are still responsible for paying any penalties. The IRS does not consider Antarctica extraterritorial, so U.S. tax law applies to earnings on the continent. See the IRS website for more information.



An *Antarctic Artist & Writer* stands along a flagged road. The Artist and Writer program lets select artists and writers travel and work in Antarctica to share the continent with the public, and the research conducted there. Photo: Mike Lucibella

Insurance

For Personal Property

During Commerical Flight

Baggage insurance is included if ASC purchases your airline ticket. If a claim needs to be processed, it is your responsibility to contact the airline and complete the required paperwork. A claim for lost baggage should be made at your final destination airport. Notify ASC Travel and keep it updated on the situation. Loss protection is limited and provided only during commercial flight segments.

During Travel

To protect against loss that occurs during transit to or from the airport, while in a hotel or during your stay in Antarctica, it is your responsibility to retain personal property insurance coverage. The U.S. government normally does not assume liability for damage to or loss of personal property unless there is clear evidence of gross negligence by government personnel acting within the scope of their employment. Although every effort is made to care for cargo, whether personal or scientific, USAP is not responsible for any damage that may occur.

For Grantees

Ensure you have adequate insurance for your stay in Antarctica. An NSF grant for work in Antarctica does not provide insurance coverage. Check with your employer or a financial consultant to find out what insurance you have and determine what additional insurance may be needed.

Health	Although medical personnel are available at each USAP station, the clinics are for urgent care and emergency needs only. The clinic physician is not a primary care physician. You will be responsible for any hospitalization costs, medical care, laboratory fees and other charges incurred outside of Antarctica. Before leaving home, examine your health coverage and purchase additional insurance if needed.
Life	U.S. federal employees' civil service policies remain in effect during Antarctic duty. However, NSF does not provide life insurance for its grantees in Antarctica. Therefore, you are urged to examine your life insurance coverage before departure to ensure you are adequately covered. You should also check with your institution to see whether its group policies provide coverage or exceptions for travel and work in remote regions. When making insurance arrangements, remember that Antarctic flights are generally considered non-scheduled military airplane operations.
Travel	Some insurance companies offer air travel insurance for scheduled commercial and AMC flights. This insurance is available at most commercial airports and AMC terminals. It generally does not cover you during flights to or in Antarctica.
Equipment	You should have insurance for project equipment as determined by the project's PI.
Workers' Compensation	If you will be working for a PI as a volunteer, workers' compensation coverage may not be provided.

Note: If you are injured while working in Antarctica or evacuated to NZ or South America, USAP management will notify your emergency contact only if you are physically incapable of notifying them on your own.

For Contractors

Employees may be eligible to enroll annually in various insurance options offered by their employer (e.g., Leidos, Amentum, GSC).

Health	If you must leave Antarctica for medical treatment, as approved by ASC Medical, you are responsible for your medical bills unless the injury or illness is deemed work-related. However, if work-related you will be required to cover all medical bills and submit for reimbursement via your employer's Defense Bill Act (DBA) insurance. The cost of extracting you from Antarctica is borne by your employer. It is highly recommended that you carry a form of medical insurance that provides coverage if you travel to other countries post-deployment. If you have enrolled in your employer's medical insurance, continuation of health coverage under the "Consolidated Omnibus Budget Reconciliation Act of 1986" (COBRA) will be available upon completion of your contract. If medical insurance was not elected, COBRA coverage will not be available.
Workers' Compensation	Any ASC employee who is injured while in Antarctica may be covered by workers' compensation. Within one day of the incident (regardless of the severity), a Medical Incident Report Form (MIRF) must be completed by the medical staff and submitted to the designated person at the station. If you feel you will need treatment after redeployment from Antarctica, contact your employer's HR to establish a claim before leaving Antarctica. If the injury cannot be treated at the station, as determined by ASC Medical, you may be transported off continent to be evaluated. Keep in mind that workers' compensation covers only injuries. Medical issues that are preexisting or not work-related (e.g., appendicitis, kidney stones) are not covered by workers' compensation. Your insurance policy through your employer or an outside carrier may cover different conditions.

Chapter 3

How and What to Pack

There will be several stops on your journey to Antarctica. Transportation providers (i.e., U.S. and foreign militaries and vessels) have different baggage allowances and restrictions that you must adhere. In NZ or Chile, you will pick up your USAP-provided Extreme Cold Weather (ECW) clothing. You may require additional personal items for the various climates, types of work and activities you will encounter. Planning is important. Read this chapter carefully.



Scientists and support staff arrive at Scott South Pole Station after a three-hour flight from McMurdo Station. Photo: Mike Lucibella

Baggage Allowances

You will travel from your airport of departure to Christchurch or Punta Arenas on commercial carriers. It is important to review the airline's baggage limitations and fees before departure. The baggage allowance on the flight from Christchurch to McMurdo Station differs from the commercial allowance on your flight to NZ. Airline checked-baggage allowances are typically one or two bags weighing 23 kilograms (50 pounds) each, plus a carry-on. See your airline's website for details before your departure.

Christchurch to McMurdo Station



All summer and winter personnel have the same checked-baggage weight allowance when flying from NZ to McMurdo Station: 39 kilograms (85 pounds) maximum. Your "boomerang bag" counts toward the allowance and is the only bag you will receive back if the flight returns to Christchurch. The Clothing Distribution Center (CDC) staff in Christchurch will provide more baggage information when you are on site.

Winter personnel at South Pole Station are granted more baggage allowance from Christchurch to McMurdo Station and onward to South Pole: 45 kilograms (100 pounds) maximum, including the boomerang bag.

The ECW gear issued to you in Christchurch weighs about 10 kilograms (22 pounds). You are required to wear certain items on the flight. The rest of the issued clothing is about 3 kilograms (7 pounds) and counts toward your checked-baggage allowance.

Chile to Palmer Station



Baggage limitations on flights to Chile apply. But there is typically no weight restriction for personal baggage on vessels from Punta Arenas to Palmer Station. Indicate on the Trip Details form in your deployment packet if you have excess baggage, as storage space on vessels is limited.

Excess Baggage

If you need to take more than the allowed weight of baggage to McMurdo Station or South Pole Station, you can mail boxes to yourself using the Air Post Office (APO) address in Antarctica. Flat mail can take 14–21 days or longer, and packages can take up to three months or longer. (See Chapter 6 for more information.) Do not send any items you will require immediately upon arrival to McMurdo Station or South Pole Station via the APO system from Christchurch.

For grantees or technical events (T-events), USAP does not reimburse excess baggage costs. However, indicate on the Trip Details form in your deployment packet if you are carrying excess baggage, as this allows the Christchurch Travel Office to plan weight and balance for flights to McMurdo Station.



A late seasonal sunrise overlooking Arthur's Harbor on the southwest coast of Anvers Island near Palmer Station. Photo: Randal Rhodes

Prescription Medications

You are responsible for obtaining a supply of your prescription medications that is sufficient to cover the entire time you will be deployed. Station medical providers are not primary care providers and cannot refill your prescription medications. You will not be allowed to winter-over unless you have enough of your regular medications to last through the winter. Carry a copy of each prescription provided by your personal medical provider. When packing bags in Christchurch for your flight to McMurdo Station, it is best to place any medications you will need in your carry-on or your boomerang bag.

You are also responsible for complying with all U.S. and international laws when exporting and importing personal medications. Consult the U.S. Food and Drug Administration website and the U.S. Drug Enforcement Administration website to determine whether your medications are controlled and require special export or import authorizations.

Travelers Through New Zealand



NZ customs laws allow you to only hand-carry a three-months supply of standard prescription medications (e.g., thyroid or blood pressure medication) into NZ. If you hand-carry more than a three-months supply of standard prescription medications (or six months of oral contraceptives), you must declare them on your arrival card. Controlled prescription medications (e.g., adderall) are limited to a one-month supply when entering and transiting through NZ. The following requirements apply to controlled medications:

- You must declare the controlled medications on your passenger arrival card.
- If you have more than one month's supply of controlled medications, you need an import license from the Ministry of Health NZ.
- You must prove to NZ Customs that the medications are required for treating your medical condition and were lawfully supplied to you in your country of origin. A letter from your doctor or a valid label on the container with your name and the quantity and strength of the medication is sufficient.

For more information on carrying medication through NZ, see the Ministry of Health NZ website.

All medications must be in properly labeled pharmacy containers. It is important that you hand-carry the initial three months of standard medication (one month for controlled medications) so you have enough supply while any additional medications are being mailed to you in Antarctica. Before deploying, ask the pharmacist to put three months of standard medication (or one month of controlled medication) in one labeled container and the remainder in a separate labeled container for mailing.

If you will be deployed for longer than your hand-carried medications will last, your doctor or pharmacy should mail additional or refill medications via courier (an international freight forwarding company) in small, priority-mail envelopes to ensure their timely arrival. Prescription medications should not be shipped in personal mail via the APO. Medicines should never be packed inside a larger box containing other items, as the box may not make it to Antarctica, whereas a small envelope (i.e., flat mail) likely will. Medications must be in their original packaging and will be inspected and assessed to ensure compliance with USAP regulations in addition to US and NZ laws. It is a violation of US Federal DEA and NZ Medicines Control laws to ship controlled medications. Medicines destined for summer participants should be mailed after Labor Day (the first Monday of September), or they will be returned.

If you need medications urgently while on station, contact the medical clinic. They will provide options on how to get the medications via Christchurch. In an emergency, you can also contact chc_medical@usap.gov with details. You will have to clear NZ Customs to reenter NZ on redeployment, and the same restrictions on the quantity of medications will apply.

Travelers Through Chile



Chilean customs laws do not restrict the amount of personal medications hand-carried through Chile. If you are deploying through Chile, you can take the entire amount of medication you need for the deployment.

Cannabis

Several U.S. states permit the medical and recreational use of cannabis and derived products. However, under U.S. federal law, cannabis is still a Schedule 1 controlled substance. Cannabis and cannabis-derived products (e.g., cannabidiol [CBD] gummies) are not allowed in Antarctica.

Cannabis is legal for medical use, but not recreational use, in NZ and Chile. You are responsible for abiding by the cannabis laws of any foreign country or airport you enter while en route to your Antarctic gateway city. Do not bring cannabis or any cannabis derivative to Antarctica.

What to Pack

Below is a general list of personal items you should consider taking to Antarctica. Adjust it to your needs and preferences. Wintering personnel, for example, should increase some quantities, while official visitors and other persons spending only a few days in Antarctica will need fewer items. Your POC can advise you about what you might need based where you will be working and how long.

Clothing

- Prescription eyeglasses (if required) + extra pair
- Sunglasses
- Gym clothes and shoes
- Jacket or warm windbreaker
- Pajamas and robe
- Pants
- Shirts: t-shirts, long-sleeve; casual and work
- Slippers for indoor wear
- Sock liners: polypropylene or Merino wool to wick moisture away from feet
- Socks: heavy to wear outdoors with boots (Merino wool or nylon), indoor
- Swimsuit (for sauna)
- Towel and washcloth

- Long underwear; thermal top/bottom; both base and mid-weight layers; polypropylene, Merino wool or silk
- Underwear
- Shower shoes

Boots and Shoes: Pack casual, work, hiking, insulated or composite-toe footwear as needed for your work. If you are unsure about the footwear you need, contact your hiring manager or other work center POC before deploying.

Footwear traction varies significantly as temperatures in Antarctica change, so be mindful when choosing your footwear for on- and-off duty tasks. Different sole compositions lose their coefficient of friction at colder or warmer temperatures. Slip- and oil-resistant soles are typically the first to lose traction. Wear traction devices when your footwear becomes more prone to slipping and sliding. Slips, trips and falls, both on and off duty, account for most injuries in Antarctica. Appropriate footwear can help prevent them.

Arc Flash Clothing: Electrical personnel or persons who may be exposed to arc flashes must select appropriate insulating base layers, in addition to their normal workwear. The base layers should be arc-rated cotton clothing, not synthetics that would melt and adhere to skin in the event of an arc flash.

Outdoor Clothing: You will be issued ECW clothing as you pass through Christchurch or Punta Arenas. Special arrangements will be made if you are taking other routes to Antarctica. The ECW clothing is a multilayered insulating system that protects participants during emergency or survival situations. This clothing will include outer garments necessary for warmth and dryness, fleece jackets and pants, gloves, thermal boots and other items. You may also be issued special clothing and safety gear (e.g., hard hats, goggles) upon arrival at your work site.

If you are experienced in cold weather conditions, you may bring your own ECW gear (e.g., boots, parka, gloves). Participants who have recently deployed through USAP may substitute some or all of the USAP-supplied ECW gear with their own clothing. First-time deployers are required to take all USAP-issued ECW clothing. If bringing your own clothing, ensure it is clean and free of soil or plant material before packing them — check the Velcro and crevices. A lightweight windbreaker is useful at McMurdo Station during the austral summer.

You must bring your own long underwear and heavy socks, ideally two sets of lightweight and midweight long underwear plus at least three pairs of heavy socks and sock liners. Polypropylene, merino wool and silk are excellent at wicking moisture and retaining heat. Contact your POC for recommendations on how much to bring for your job and location.

Indoor Clothing: You must bring your own regular indoor clothing (e.g., underwear, socks, shirts, pants, shoes). No dry-cleaning services are available in Antarctica. Base the quantity of clothing you bring on recommendations from your POC, the length of your deployment and the type of work you will conduct.

Layering: Temperatures inside and outside buildings can vary drastically. The best way to manage these changes is by layering your clothing. This will allow you to shed or add layers quickly and easily. Several thin layers are more effective than one bulky layer.

Travel Attire: While informal clothing is acceptable while you travel to Antarctica, both your appearance and behavior will reflect upon USAP and by extension the U.S. Compose yourself accordingly.

Note: Plan for changing weather conditions in NZ and Chile. Cold temperatures and rain can be expected even during the spring and summer months. Lightweight rain gear and a warm sweater or jacket are recommended.

Other Items

- Batteries, rechargeable/charger.
- Camera/camera batteries.
- Coffee mug or small thermos.
- Day pack.
- Hair dryer.
- Hobby, craft items (small).
- Laundry bag.
- Lip balm.
- Ear plugs.
- Lock; combination or key.
- Ethernet adapter for your laptop.
- Musical instrument/spare parts.
- Prescription medications.
- Skis: skate/cross country (many skis are available at the stations to borrow).
- Plastic food containers with lids to hold left-over food in your dorm room mini-refrigerator.
- Toiletry articles: toothpaste, dental floss, comb, razor, shave cream, deodorant, soap and skin lotion for dry skin, tampons.
- Vitamins.
- Water bottles.

Bedding: USAP supplies sheets, pillows, pillowcases and blankets while you are in Antarctica.

Towels and Washcloths: USAP does not provide towels and washcloths at McMurdo Station or South Pole Station, but it does provide towels at Palmer Station.

Power Adapter: USAP stations use 110-volt power, which is the same as in the U.S. Vessels contracted for grantees may have other types of outlets. NZ and Australia use 230-volt power, while Chile uses 220-volt power. As such, a universal power adapter is ideal for powering your devices (e.g., hair dryers, electric razors) while traveling. Laptops, phones and other personal electronics typically have a built-in voltage converter but still need a plug adapter for the outlet.

Sunglasses: Sunglasses or goggles are crucial. Your ECW issue includes ski-type, UV-protective goggles, including clear lenses if you will winter-over in Antarctica. Participants should bring two pairs of 100% UV-protective sunglasses



Five members of the South Pole 2022 winter-over crew formed a band they named 'Ace and the Paddy's' for St. Patrick's Day. It is common for USAP participants to form bands during their free time. Photo: Dennis Perkins

in case one pair is lost or damaged. Consider wraparound frames, side shields, nose guards or other features to protect your eyes from harsh ambient sunlight and light reflecting off snow and ice. Some dark glasses do not block UV but do cause the iris to widen and admit more sunlight, increasing your risk for eye damage (e.g., snow blindness). Sunglasses or goggles are especially important on windy days to keep volcanic ash particles from entering your eyes. If you wear prescription glasses, also bring prescription sunglasses with the above-recommended features. Eye protection is your responsibility.

Prescription Eyeglasses and Contact Lenses: If you wear eyeglasses, bring a copy of your prescription and spare glasses to Antarctica. There are limited means for replacing eyewear in Antarctica, and you will be responsible for any replacement costs.

If you wear contact lenses, carry them with you while traveling to avoid damage from freezing. There are no issues with using contacts in Antarctica. Limited quantities of lens cleaning supplies are available at station stores, including regular and sensitive-eye solutions for soft lenses. Heat-type solutions are not available. If you prefer certain brands of lens care products, bring enough to last your entire stay.

Water Bottle: Bring at least one water bottle to carry with you throughout the day. Antarctica is a polar desert, and staying well hydrated is important. A limited supply of water bottles may be available in the station store.

Recreational Gear: While musical instruments and recreational equipment are available for

checkout at the three USAP stations, the variety and availability differ by facility. Depending on your length of stay, you may wish to bring or mail your own recreational gear. Gear may take three months or more to arrive by mail. Ensure all recreational gear is clean before it is packed. Consult your POC for more information.

Smartphones: You will not have cellular service in Antarctica. However, depending on the station, you may be able connect your smartphone or tablet to the USAP public Wi-Fi for internet access. You may also use your smartphone as a music player, camera or alarm clock. Consult the Program Operations > Information Technology and Communications Services section of the USAP website for details.

Do not forget your smartphone charging cable and earbuds. At McMurdo Station, operations Wi-Fi is available only in limited areas and only to grantees with a 24/7 mission-critical need to stay connected (if approved in their SIP), while public Wi-Fi is available in, for example, the dormitories, Coffee House, gyms and most common areas of BL155. You can connect to Wi-Fi in most areas at Palmer Station and when satellite coverage is available at South Pole Station. Consult the IT orientation in the Bridge online training system for more information about personal IT capabilities and requirements.

Items at Station Stores

The station store at each USAP facility carries a limited supply of toiletries, gift items, batteries, snacks and soda. Inventory is largely meant to supplement items you should bring with you. Your POC can give you a good idea of what items are stocked in the store at the station where you will work. Each station store typically carries the following items, which vary due to the remoteness of Antarctica and supply and demand.

- Body Soap
- Combs
- Dental Floss
- Deodorants
- Eye Care Solution,
- Eyeglass Repair Kits
- Facial Tissue
- Lotions
- Feminine Hygiene Products
- Hairbrushes
- Hair Conditioners
- Lip Balms
- Mouth Wash
- Nail Clippers
- Sewing Kits
- Shampoo
- Shaving Cream
- Sunscreen
- Toothbrushes
- Toothpaste
- Tweezers



Due to the extreme cold, a hot pot of coffee freezes over as it's poured into a mug at South Pole Station. Photo: Manwei Chan

Toiletries: Antarctica is extremely dry, so hand lotion and lip balm are recommended. You are encouraged to bring your own as the station stores carry a limited selection of moisturizers, soaps, toothpaste and other toiletries. Do not bring any soap, body wash, toothpaste, cosmetic or other item if it contains microbeads, which pollute the environment via water treatment systems, which cannot filter them out. Microbeads were prohibited under U.S. federal law in 2015.

OTC Medication and Pain Relievers: Bring your own supply of over-the-counter (OTC) medications (e.g., vitamins, cold remedies, pain relievers) for use during your deployment. Non-prescription strength aspirin and cold medicines are usually available for purchase at station stores though store supplies are unpredictable. It is best to carry OTC items in their original packaging. If you repack OTC items to conserve space, retain their original labels to avoid problems with customs. Most herbal medicines, dietary supplements and OTC medications may be brought into NZ and Chile. However, some traditional medicines may contain plant or animal ingredients that are protected by the treaty Convention on International Trade in Endangered Species of Wild Fauna and Flora. If in doubt, declare OTC items on your incoming passenger arrival card.

Vitamin D3: Research suggests that maintaining an adequate level of vitamin D in the blood can reduce the frequency and severity of respiratory infections. Vitamin D3 supplements are easily acquired in most U.S. pharmacies. See Chapter 6 for more information.

Menstrual Hygiene: A limited selection of menstrual supplies is usually available at

the station store. Participants should bring enough of their preferred menstrual items for their deployment.

Sunscreen: Carry and use sunscreen with UVA and UVB protection and a minimum SPF of 15. Ensure the product will not expire while you are in Antarctica. The sun is up 24 hours a day during the summer, and light reflecting off snow and ice increases sunburn risk, especially at South Pole's higher elevation.

What Not to Pack

When packing items to make your stay in Antarctica more comfortable, select those with the least environmental impact (e.g., biodegradable soaps and shampoos), minimize outer packaging, and do not bring excessive quantities.

Plants, Seeds and Animals: The Antarctic Treaty and Antarctic Conservation Act (ACA; 16 U.S.C. § 2401 et seq.) prohibit the importation to Antarctica of any of the following:

- Seeds, including chia seeds.
- Plants and plant parts, except by permit and under controlled conditions.
- Animals, including insects and animal parts.

Pests: Do not pack a pest when you pack bags for Antarctica! Clean your clothing and footwear before packing them to prevent inadvertently importing non-native species or other organic materials. Ensure there are no seeds or other plant parts caught in Velcro, no mud on boots and no grass inside cuffs. Read USAP's Don't Pack a Pest brochure for more information.

Biologically viable organisms in food, personal care products and supplements are also prohibited from being imported and used in Antarctica. This includes SCOBY (symbiotic culture of bacteria and yeast), which is used to make yogurt, kombucha and beer, probiotics, spirulina and similar biologically active products.

Microbeads: Microbeads, tiny plastic particles in bath and beauty products, are banned in Antarctica. Do not pack any personal care products containing microbeads. They cannot be contained by wastewater treatment and will be discharged into the ocean environment, resulting in plastic pollution. Microbeads can absorb toxins and be ingested by marine organisms. See the Beat the Microbead website for country-specific lists of products that contain microbeads.

Triclosan: The antimicrobial agent triclosan is banned from household products in the U.S. USAP has not purchased soaps or personal care products with triclosan since 2015, and participants should not bring them to Antarctica. Triclosan is not removed during wastewater treatment and accumulates in the tissues of marine organisms

Polystyrene: Polystyrene packaging materials (e.g., peanuts, chips, beads) are prohibited in Antarctica as they can easily blow away and harm wildlife. Use clothing to cushion your packed items, and advise family members and friends not to use polystyrene packaging in mail they send to Antarctica.

Aerosols: Avoid using aerosols such as hair spray, pressurized containers of deodorant and shaving cream. These items become



A USAP participant searches through her duffel bag in the Christchurch clothing distribution center dressing room. Photo: Elaine Hood

hazardous waste due to their ingredients or being pressurized.

Disposable Batteries: Disposable batteries (e.g., mercury, alkaline or lithium cells) are discouraged in Antarctica. Instead use rechargeable batteries and a charger.

Do not store loose batteries (i.e., batteries not fitted to a device) or power banks in your checked baggage. Instead place them in the manufacturer's packaging, or individual plastic bags at the CDC, before check-in and hand-carry them onto your flight. If you are flying from Christchurch to McMurdo Station on the Royal New Zealand Air Force (RNZAF) Boeing 757 plane, all battery-containing items (e.g., rechargeable toothbrushes, razors, laptops, mobile phones, power banks) must be included in your hand-carry bag and cannot be checked in. Your baggage is screened and X-rayed at check-in.

Uncrewed Aerial Vehicles: Unless you have authorization from NSF, operating uncrewed aerial vehicles (UAVs; aka drones or remotely piloted aircraft) in Antarctica is prohibited.

Magazines, Catalogs, Newspapers and Junk Mail: Magazines, catalogs, newspapers and junk mail are discouraged. Do not have your mail forwarded to your Antarctic address, as it increases the amount of waste that must be removed from the continent.

Disposable Containers: Eliminate as many disposable containers from your baggage as possible. This will help reduce solid waste in Antarctica. Repackage products into containers you are likely to take home with you, but keep prescription labels with any repackaged

OTC medications and use original containers for prescription medications. Alternatively, use Ziploc bags that can be reused during your stay. Follow this Leave No Trace principle: If you pack it in, pack it out.

Commercial or Other Business Activities: You may not market or sell clothing or finished articles that were printed, manufactured or assembled outside Antarctica. You may not import materials to finish and market such items locally. U.S. federal law forbids using an APO address to ship articles or materials destined for private resale operations. USAP also prohibits using government transportation to ship goods and materials for unauthorized personal business activities.

Hazardous Materials: Explosive gases, flammables, oxidizers, poisons, radioactive material, corrosives and other hazmat may not be transported as baggage, via mail or hand-carried. See Chapter 4 for more information.

Open Flames and Heat Sources: Fire danger is high in Antarctica. Open flames, candles, incense and similar items are prohibited. Electric blankets are not allowed for safety and power reasons. Any device that can be used to heat cooking oil is not allowed, as splattered oil poses a fire danger.

Getting Gear to Antarctica

If you are flying from Christchurch to McMurdo Station, your personal belongings and any ECW clothing you are not wearing, will be transported as checked baggage on a cargo pallet or in an aircraft hold. You will be allowed a carry-on bag, which must not exceed 61 × 38 × 23 centimeters (24 × 15 × 9 inches) or 45 × 30 × 23 centimeters (18 × 12 × 9 inches) if traveling on an RNZAF C-130 or Boeing 757. All luggage will be screened as you check in at the Antarctic Passenger Terminal (APT) in Christchurch.

Laptops are accepted as hand-carry and must fit into the hand-carry dimensions along with the rest of your items. Unlike commercial airlines, liquids, aerosols and gels are not restricted in carry-on luggage to Antarctica. However, you may not bring sharp objects aboard planes. If you bring a pocketknife, scissors, multitool or other sharp object to Antarctica, stow them in your checked baggage. Your baggage will be screened using various detection sensors, including a drug detection dog. The contents of your baggage may also be subject to visual inspection.

If you are traveling to Antarctica on a vessel, pack the items you will need for the five-day ocean journey in a small piece of luggage. Any baggage you store in the cargo area will be inaccessible during the journey. Mark all your bags clearly with tags, including the bags you carry aboard. Also place identification inside each bag. Include your assigned Antarctic station, the initials “USAP” or “ASC” or the event number, and a return address.

Equipment prone to damage by subfreezing temperatures is designated as “do not freeze” (DNF) in the USAP transportation network. Do not pack DNF equipment in your checked baggage, which may experience low temperatures during transit or when staged for onloading. Use the USAP cargo system to protect DNF gear from freezing. See Chapter 4 for more information.

You may hand-carry delicate scientific instruments. You are responsible for handling personal baggage to and from Antarctica unless it is checked as air cargo. If delicate instruments are to be moved as air cargo, clearly mark any handling requirements on the container. Pack items securely in easily handled containers.

Storage Availability

New Zealand



There is limited storage space at the CDC in Christchurch, where you can leave items not needed in Antarctica (e.g., warm-weather clothing, street shoes, backpacking equipment, NZ souvenirs). You will have little time to sort through your baggage before checking in for your flight to McMurdo Station, so plan and organize your baggage and storage items in advance.

USAP participants may mail personal equipment to NZ at international mailing rates. These items should not be mailed more than 60 days before your arrival in Christchurch. Items received after your departure to Antarctica will be held in the CDC's baggage storage room until you redeploy from Antarctica. The address is as follows:

[Participant's Name]
HOLD IN CHRISTCHURCH
Private Bag 4747
Christchurch 8140 New Zealand

Items can be stored in the CDC when redeploying from Antarctica to Christchurch as well. This assists participants who plan to take personal vacations before returning to their AOD. This storage is limited to 60 days. APO services are available from Christchurch as well. See Chapter 6 for more information.

Chile



In Punta Arenas, there is limited secure storage that is usually reserved for scientific projects and equipment. Contact ASC Travel if you require storage in Chile, as approval and arrangements must be made with Maersk for the warehouse in Punta Arenas.

Chapter 4

Environmental Protection, Permits and Science Cargo

This chapter discusses environmental impact assessments (EIAs), the ACA and how to obtain a permit for activities that may impact the Antarctic environment. It also covers shipment of science cargo (e.g., specimens) from Antarctica and related rules.



An Antarctic fur seal surveys the landscape on Dream Island near Palmer Station. Ranging along the northern tip of the Antarctic Peninsula, they're thought to be the most abundant subspecies of fur seal. Photo: Mike Lucibella

Environmental Impact Assessment

U.S. federal regulations and the Antarctic-Environmental Protocol require that all proposed activities in Antarctica be assessed for their impact on the environment or dependent or associated ecosystems. Annex I of the protocol establishes the process for EIAs. Preliminary EIAs are completed for all USAP activities. If it is determined that an activity will have a less than minor or transitory impact, the activity may proceed as documented in a Record of Environmental Review. If the environmental impacts are likely to be greater, then additional review will be required. Depending on the expected level of impact, an initial environmental evaluation or comprehensive environmental evaluation will be prepared.

OPP works with grantees planning to conduct the activity to ensure that all environmental reviews have been completed and appropriate mitigating measures are in place before the activity proceeds.

Antarctic Conservation Act

The ACA implements various requirements, as delineated in the Antarctic-Environmental Protocol, and applies to any person subject to U.S. jurisdiction. Any violations of the ACA may result in civil fines, criminal fines or imprisonment for up to one year. Other penalties can include removal from Antarctica, rescission of a grant or sanctions by an employer. The ACA assigns NSF and other agencies regulatory, permit and enforcement authority.

USAP participants must be engaged and comply with the ACA, from the time they start planning for deployment until after they leave Antarctica. This involves common sense preparations to minimize pollution and avoid interference with flora and fauna, as well as becoming familiar with the more complex requirements of the ACA.

General Prohibitions

Specifically, the ACA prohibits the taking or harmful interference of native Antarctic mammals, birds and plants unless specifically allowed by a permit. "Take" or "taking" means to kill, injure, capture, handle or molest a native mammal or bird or to remove or damage such quantities of native plants that their local distribution or abundance would be significantly affected. "Harmful interference" includes the following:

- Flying or landing helicopters or other aircraft (e.g., UAVs) in a manner that disturbs concentrations of birds and seals.
- Using vehicles or vessels (e.g., hovercraft, small boats) in a manner that disturbs concentrations of birds and seals.
- Using explosives or firearms in a manner that disturbs concentrations of birds and seals.
- Willfully disturbing breeding or molting birds or concentrations of birds and seals by persons on foot.
- Significantly damaging concentrations of native terrestrial plants by landing aircraft, driving vehicles, walking on the plants or other means.
- Engaging in any activity that results in the significant adverse modification of habitats of any species or population of native mammal, bird, plant or invertebrate.



Vince's Cross near the tip of the peninsula is a memorial to George Vince, a member of Robert Falcon Scott's Discovery expedition who slipped off of a cliff and drowned while trying to return to the ship during a blizzard in 1902. Photo: Peter Rejcek

Historic Sites

The Antarctic Treaty has designated more than 90 Historic Sites and Monuments (HSMs) for protection. Steps have been taken to restore and preserve tombs, buildings and other objects of historic interest on the continent. If you approach HSMs, do not touch, deface or damage them. If you come across a potentially historic artifact, refrain from touching it and report the find and its location to an NSF representative or ASC management.

There are five HSMs in the McMurdo Station vicinity: Observation Hill, Scott's Hut, Vince's Cross, the Richard E. Byrd Memorial and a plaque commemorating the location of the former nuclear power plant. Two HSMs are located near South Pole Station: Amundsen's tent, erected in 1911, and Flag Mast, established in 1965. The exact locations of these monuments are unknown.

Capes Royds, Cape Evans and Cape Adare have historic huts or other remains. Respect the basic rule that prohibits touching, removing or disturbing any materials from these sites, whether for either souvenir or scientific purposes. The historic huts at Hut Point, Cape Royds and Cape Evans have been designated ASPAs by the Antarctic Treaty and require a permit to enter. For information about periodic group visits to these huts, see the administrative coordinator in BL165 at McMurdo Station.

USAP has also commemorated historic events with plaques. The Our Lady of the Snows shrine was established in memory of Richard Thomas Williams, a U.S. Navy Seabee who

drowned when his tractor broke through the sea ice in January 1956. The Raymond Smith Monument commemorates U.S. Navy Boatswain's Mate First Class Raymond Thomas Smith, who died in 1982 during an unloading accident in Winter Quarters Bay.

Specially Protected and Managed Areas

Several places in Antarctica are designated under the Antarctic Treaty as Antarctic Specially Protected Areas (ASPAs), which protect environmental, scientific, historic or wilderness values. You must have a compelling need and a permit to enter an ASPA and carry your permit while working in an ASPA. Some ASPAs are near USAP stations (e.g., Arrival Heights near McMurdo Station, Litchfield Island near Palmer Station). Other ASPAs include the historic huts around McMurdo Station.

Antarctic Specially Managed Areas (ASMAs) are set aside to plan and coordinate activities to avoid conflicts between Antarctic programs, minimize environmental impacts and improve international cooperation. No permit is required to enter an ASMA. USAP commonly works in the McMurdo Dry Valleys ASMA, South Pole ASMA, and Southwest Anvers Island and Palmer Basin ASMA.

All activities within an ASPA or ASMA must comply with the associated management plan and codes of conduct. See the Antarctic Treaty Secretariat webpage for ASPAs, ASMAs and their current management plans.

Non-native Species

You require a permit to introduce non-native species to the Antarctic (i.e., south of 60° south latitude) and a clear research or operational need. This includes lab animals and plants, viruses, bacteria, yeasts and fungi. The ACA allows importation of food plants under special circumstances, such as for hydroponic vegetable gardens, which are cultivated at South Pole Station and several other Antarctic stations. If you have questions about introducing non-native species, email the ACA Permit Office at ACApermits@nsf.gov.

U.S. Import-Export

In the U.S., it is unlawful to have, sell, import or export Antarctic plants, mammals, birds or their parts without a permit. The permit application must identify the U.S. port that will be used for the import-export and demonstrate that the import-export aligns with the ACA's purposes and would further the purposes that the species was taken or collected for. Mailing items to or from the U.S. constitutes import-export.

Waste Management

ACA waste management regulations ban several substances from Antarctica, including the following:

- Pesticides, except those with a permit and required for scientific, medical or hygiene purposes.
- Polychlorinated biphenyls (PCBs).
- Nonsterile soil.
- Polystyrene beads, plastic chips and loose polystyrene packing material (e.g., packing peanuts).
- Microbeads typically found in personal hygiene products (e.g., toothpaste, face, body wash).

Environmental Guidelines

Below are some examples of how you can do your part to protect the Antarctic environment. But be sure to follow all environmental guidelines covered throughout this guide.

- **Do not litter.** Use the appropriate receptacles and comply with the waste management program at your station and work site. Winds can turn litter into dangerous flying materials.
- **Secure construction sites.** Pick up debris and dispose of it properly. Protect outdoor materials from being scattered by the wind.
- **Handle waste properly.** If you handle waste, know the rules. If you do not know them, ask a supervisor, lab manager, ASC waste management employee or NSF representative.
- **Leave only footprints.** Bring everything back to a research station or vessel from field camps. This includes human waste. Do not collect feathers, animal parts, plants or rocks as souvenirs.
- **Handle lab chemicals properly.** Pack, store and identify lab chemicals correctly. Arrange for their proper disposal according to their instructions.
- **Prevent spills.** Take the time and precautions necessary to avoid spills. Use secondary containment and absorbent spill pads when transferring fuel. Waste fuels and lubricants must be labeled and stored for return to the U.S. All spills must be reported.
- **Help clean up.** Volunteers assemble from time to time to remove any trash or debris from an area. This is an opportunity to work with your colleagues to keep camp and station areas clean.
- **Avoid disturbing wildlife.** Do not walk or sit on vegetation, touch or handle birds or seals, startle or chase any bird from its nest or wander indiscriminately through penguin or other bird colonies. If wildlife is reacting to you, you are too close.
- **Do not collect eggs, feathers, rocks, bones or fossils.** Leave all specimens where you find them. Collection of anything from south of 60° south latitude for

export requires a permit from the ACA Permit Office.

- **Do not introduce plants or animals to Antarctica.** Clean your gear and clothing before arriving in Antarctica.
- **Prevent cross-contamination.** Avoid transferring soil from stations to field sites and between field sites. Brush boots before boarding vessels or aircrafts, and consider using boot covers or dedicated boots for work at field sites. Do not enter any ASPA without a permit. Adhere to the associated management plan when working in an ASPA or ASMA. Avoid interference with scientific work. And do not enter unoccupied buildings or refuges except in an emergency.
- **Take care of Antarctic HSMs.** Do not touch, damage, disturb or deface HSMs.
- **Do not conduct open burns.** Open burning of any kind in Antarctica is prohibited by the ACA.

Designated Pollutants

When you pack for Antarctica, pay close attention to designated pollutants, which under the ACA must be used, stored and disposed of in a way that prevents their release to or adverse impact on the environment. Consider how you should minimize and handle these substances and whether you can bring benign substitutes instead.

Designated pollutants include any substance listed by name or characteristic (e.g., flammable, corrosive, reactive, toxic) in the "Clean Air Act," "Clean Water Act," "Resource Conservation and Recovery Act" and other U.S. laws. Waste containing designated pollutants is deemed Antarctic hazardous waste and must be used, stored and disposed of in controlled ways. Many research and industrial supplies and common substances (e.g., lighter fluid, fingernail polish remover) are designated pollutants. ASC holds the USAP Master Waste Permit that describes their management. If you have any questions about substances you intend to bring to Antarctica, contact Environmental@usap.gov.

Note: ACA enforcement officers are federal officials responsible for ensuring compliance with both the ACA and issued permits. These officers are authorized to fully exercise law enforcement when performing their duties.



A USAP scientist climbs a mound of rocks and moss to collect moss and peat samples at Robert Island along the Antarctic Peninsula. Photo: Mike Lucibella

Permits and Reporting

Meteorite Collection Approval

Per 45 U.S.C. § 674, NSF must approve any collection of meteorites in Antarctica, which may be allowed for scientific research purposes only. U.S. expedition organizers must submit a plan of procedures to NSF that detail how specimens will be properly collected, handled, documented and curated to preserve their scientific value.

ACA Permit

NSF will not allow activities in Antarctica until their ACA permit is approved or deemed unrequired. Collecting any materials in Antarctica is prohibited unless specifically authorized by an NSF-issued permit. You may not engage in activities until you have a permit to do so, and no permit is retroactive. You are responsible for understanding whether an ACA permit is needed for your proposed activities. If you have any questions, contact the ACA permit officer at ACApermits@nsf.gov.

On average, 60 days are required for NSF to review and decide on an ACA permit. During

that time, a summary of the application is published in the Federal Register for public comment. NSF evaluates public comments and performs an internal review. It then approves the application, approves it with modifications or rejects it.

Other Environmental Permits

You may need to obtain permits from other U.S. federal agencies (e.g., National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service) if your project involves one of the following:

- Any marine mammal, as defined by the "Marine Mammal Protection Act of 1972" (16 U.S.C. 1362(5)).
- Any endangered or threatened species under the "Endangered Species Act of 1973" (16 U.S.C. 1531 et seq.).
- Any bird protected under the "Migratory Bird Treaty Act of 1918" (16 U.S.C. 703 et seq.).

NSF cannot issue an ACA permit until the ACA permit officer receives copies of valid permits required under the above laws.

End-of-Season Report

At the conclusion of field activities, grantees must submit an environmental end-of-season (EOS) report to Environmental@usap.gov. (Email Environmental@usap.gov to obtain a copy of the Microsoft Excel template for the report.) To ease the process and increase accuracy, populate the report with information throughout the season. See the template for specifics on the data to collect and quantify.

Import-Export Regulations

U.S. federal laws and regulations control the taking and importing into the U.S. of certain biological specimens, alive or dead. Other countries have rules for crossing their borders with certain materials. Grantees are responsible for knowing and complying with import-export restrictions and obtaining the required clearances in advance. Keep your ASC science support POC informed by sending copies of import-export correspondence, actions and permits granted. The NSF representative in Antarctica cannot provide clearances from the field.

U.S. Restrictions

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) regulates imports into the U.S. of all animal-origin materials and soils that could be a disease risk to U.S. livestock. Animal-origin materials include animal products, animal byproducts and biological materials that contain or have been in contact with materials of animal origin, including cell cultures. You may not bring such materials into the U.S. without a permit. To verify your project's requirement, contact APHIS.

Non-U.S. Restrictions

All countries have some restrictions against importing harmful plants or animals, or soil samples that might contain harmful seeds, insects, bacteria or fungi. NZ has particularly stringent regulations regarding the importation or transshipment of biological and laboratory samples. Obtain a permit from the Ministry for Primary Industries (MPI) to bring such samples into NZ, whether from the U.S. or Antarctica. While Chile has not restricted transshipment of specimens or technical equipment, contact your consulate in Chile for more information. For import restrictions in Argentina, contact your consulate for more information.

To avoid issues with customs officials, U.S.-based grantees must obtain necessary foreign import or transshipment permits before leaving for Antarctica, particularly when hand-carrying biological samples. Send copies of all related correspondence to your ASC science support POC. Also enter information on the samples' movement into the Participant On-Line Antarctic Resource Information Coordination Environment (POLAR ICE), the web database used to create SIPs. During this process, an application for an MPI permit will be created, which must be done at least eight weeks before you leave for Antarctica.

Item Restrictions

Controlled Drugs, New Organisms, and GMOs

If your research requires moving controlled drugs, new organisms or genetically modified organisms (GMOs) from the U.S. to Antarctica, permits from U.S. and NZ agencies must be obtained.

Controlled drugs for research purposes require advance planning and documentation. Notify your ASC science planner if you anticipate using controlled drugs during your field season. You must procure the controlled drugs required for your research, but ASC will arrange for their shipment to Antarctica. Protocols set forth by the U.S. Drug Enforcement Administration apply while in Antarctica. See Chapter 3 for information on personal prescription medications.

The NZ support contractor PAE NZ holds a standing approval from the NZ EPA to trans-

ship new organisms and GMOs through NZ to or from Antarctica. Provided your organisms meet the definition of the "risk groups" contained within that NZ EPA decision document, you can transport them. For a copy of the decision document and applicable MPI permit, contact the Crary Lab supervisor at MCM-Crary-LabSupervisor@usap.gov or PAE NZ office at CHC-MPIpermits@usap.gov.

If an organism does not meet the criteria in the decision document, a new application must be submitted to NZ EPA. The process to complete this is available on the NZ EPA Website. Processing time for applications may take 12 weeks or more.

Radioactive Materials

Using radioactive materials in Antarctica requires strict adherence to USAP policies and procedures to avoid contaminating the Antarctic environment and ensure the safety of personnel. OPP must approve the use of radioisotopes in Antarctica before any radioactive material is shipped south. A hardcopy of the approval must accompany all radioactive material shipments to and from Antarctica. PIs are responsible for procuring, packaging, transporting and retrograding the NSF-approved radioactive materials required for their projects.

PIs must direct their requirements through the radiation safety officer of their institution to ensure compliance with state, national and international regulations pertaining to packaging and shipping radioactive materials. For shipments to and through NZ, email the hazmat specialist in Christchurch at chc-hazmat@usap.gov or fax them +64-3-358-1479. When shipping radioactive materials or having them consigned from a vendor, ensure that any material packaged within category "Yellow-II" does not exceed a transport index of 1.0 and that any "Yellow-III" packages do not exceed a transport index of 3.0.

It is against the law to hand-carry radioactive materials into NZ. Radioactive isotopes cannot be shipped to NZ without the appropriate consent to import radioactive materials. The hazmat specialist in Christchurch must receive importation documents five business days before radioisotopes are shipped through or to NZ. Accordingly, if you plan to order radioisotopes from U.S. vendors and have them ship them to NZ, then you must adhere to the following instructions:

All orders must be marked by the vendor for the following:

> U.S. National Science Foundation c/o PAE (NZ) Limited
> Gate 1, Orchard Road North
> Christchurch International Airport
> Christchurch, New Zealand

The project's event number and the PI's name must also be included in the shipping instructions so that the hazmat specialist in Christchurch knows whom to consign the shipment to in Antarctica. After the order is placed with the vendor, send the hazmat specialist in NZ an email (hazmat@usap.gov) or fax (+64-3-358-1479) with the following information based on the type of radioactive materials:

- Unsealed radioactive materials (i.e., not shipped as an integral part of equipment)

- Radionuclide
- Activity per item
- Number of items
- Description of radioactive material
- Country of origin
- Expected departure date from country of origin (include country name, e.g., United States) and expected arrival in Auckland, NZ
- Sealed radioactive materials (i.e., contained and shipped as an integral part of equipment)
- Radionuclide
- Activity per item
- Number of items
- Year of manufacture (if known)
- Source serial number (if known)
- Instrument type
- Model #
- Serial #
- Country of origin
- Expected departure date from country of origin (include country name, e.g., United States) and expected arrival in Auckland, NZ

You are required to follow up with confirmation of the airway bill, flight numbers and special handling instructions (e.g., DNF) as soon as the shipment is confirmed. When the shipment is received in Christchurch, the hazmat specialist ensures it is consigned to the PI at a station in Antarctica. Do not hesitate to contact the hazmat specialist (i.e., PAE NZ cargo/hazardous coordinator) with any questions via phone at +64-3-358-1417 or +64-027-435-7731 (mobile), fax at +64-3-358-1479 or email at hazmat@usap.gov.

Shipping Samples

From U.S. to Antarctica

If you are shipping samples from the U.S. through NZ to Antarctica, a copy of your permit will be sent directly to you, along with a letter from the contract manager of NZ Operations. If you plan to hand-carry your samples, you must notify the Christchurch hand-carry email group (chc-handcarry@usap.gov) of your intentions and provide all special handling requirements. You will be advised in the letter from the contract manager that you need to carry your permit and your letter with you. When you arrive in NZ, you must declare your samples and present the permit and letter to the MPI inspector at the border. If you also have new organisms or GMOs, you must present the additional paperwork provided to you by PAE NZ.

If you are shipping your samples directly from the U.S. to Antarctica, you must attach the permit and any other applicable paperwork to the boxes being shipped.



A science laboratory assistant collects samples of orange and black algal mats at sites along Green Creek, by the Canada Glacier in the Taylor Valley. Photo: Bryan Minnear

From Antarctica to NZ

If samples in Antarctica are being imported into NZ as the final destination, the destination institution or agency must provide a copy of their MPI import permit to accompany the samples. A copy must be sent to the grantee importing the samples, to the Crary Lab supervisor at MCM-Crary-LabSupervisor@usap.gov and to CHC-MPIpermits@usap.gov.

From Antarctica to U.S.

If you are shipping or carrying samples from Antarctica to the U.S., your permit will be sent to Crary Lab at McMurdo Station. They will be held there until you are ready to leave the continent. All sample shipments must be accompanied by a letter on university letterhead that answers the following questions:

1. What is the source of the product?
2. If animal, what is the type and origin?
3. Does the product contain any animal byproducts?

More information can be found in the USAP Packing and Shipping Instructions document. A copy of these instructions can be sent to you upon request.

When you are ready to ship your samples from McMurdo Station, contact Crary Lab and the Science Cargo supervisors with details of your

shipment. If you are working in the Antarctic Peninsula, get transport details from the Palmer Station area manager, local Transportation & Logistics (T&L) staff or a marine project coordinator. You will be required to identify the contents of containers, relevant permits, special handling requirements (e.g., dry ice) and addressees. State whether the containers will be hand-carried or shipped independently.

If you plan to hand-carry your samples through NZ to the U.S., you must present a copy of your permit and declare your samples to MPI Biosecurity when you enter NZ. If you plan to hand-carry but did not indicate this in your SIP, immediately advise your ASC POC and ASC Travel of the nature of the samples and the name of the person who will be hand-carrying them. This will allow ASC Travel to ticket the individual appropriately through NZ. Australia does not allow hand-carried samples.

Science Cargo

Data and specimens should be transported with the same care and forethought that went into planning research projects. The Packaging and Shipping Instructions document explains how to package and ship your science cargo to and from Antarctica. This publication covers methods for safe and damage-free shipping, how to time shipments, and the name, address and phone number of Port Hueneme representatives.

Due to restrictions around transporting cargo to Antarctica, requirements are analyzed and cargo loads are planned months in advance. Planning begins with information gathered from the research proposal and POLAR ICE. Responsibility for cargo and passenger movement within the Antarctic continental area rests with the ASC continental T&L manager. During the summer season, Antarctic Terminal Operations (ATO) manages all cargo transported to McMurdo Station and onward.

USAP Science Cargo focuses on cargo related to science projects and technical events. All hazardous cargo is also processed through the USAP Science Cargo office. At McMurdo Station, cargo is documented, packaged and labeled for transport then turned over to the Movement Control Center (MCC) for transport. To find out where in the USAP cargo system your items are located, provide Science Cargo staff with a copy of your USAP shipping documents or, for commercial shipments, a copy of the bill of lading or airway bill.

To Palmer Station

Cargo for Palmer Station is routed to Punta Arenas by commercial surface (COMSUR) or commercial air (COMAIR) for onward transport to Antarctica. See the Peninsula Logistics Schedule on the USAP station intranets (or TL-FRM-0100 on the USAP Master List) for cruise deadlines.

To McMurdo Station via Resupply Vessel	A chartered, U.S.-flag cargo vessel sails annually from Port Hueneme to McMurdo Station, arriving around the last week of January. Cargo for this ship must be received in Port Hueneme by mid-November, but the date is subject to change. This vessel is the preferred mode of transport for delivering materials to McMurdo Station, South Pole Station and continental field camps. Maximum use of this mode is possible only through careful planning by all stakeholders. Allow sufficient time for shipment by resupply vessel. When possible, plan to position cargo in Antarctica the season before the scheduled field work.
To McMurdo Station via USAP Airlift	USAP airlift refers to the scheduled movement of cargo and passengers from Christchurch to McMurdo Station via aircraft. The airlift periods are generally one week in late August and the first week of October to the end of the operating season in February. Winter flights (WinFlys) may occur but are subject to change. There is an airlift gap in from late December through late January. COMSUR vessel shipment to Christchurch (via Port Lyttelton) is the preferred transport mode for airlift cargo. In general, airlift cargo must arrive in Port Hueneme according to the shipping dates noted in the Packaging and Shipping Instructions and on the Continental Area Acquisition Schedule on the USAP station intranets (or TL-FRM-0049 on the USAP Master List).
To and From South Pole Station	Cargo to and from South Pole Station is transported only during the summer season and almost entirely by LC-130 and Basler aircraft or overland via the South Pole Traverse (SPoT) from McMurdo Station. The aircraft operate from late-October through mid-February. Mostly fuel is transported via SPoT. South Pole Station is physically isolated the rest of the year. ASC logistics personnel at McMurdo Station and South Pole Station determine cargo plans and schedules.

Via COMSUR	ASC reserves space on multiple oceangoing commercial vessel voyages to position cargo in Punta Arenas and Christchurch. COMSUR is more economical than airlift. Both the Peninsula Logistics Schedule and Continental Area Acquisition Schedule provide the shipping deadlines and required delivery dates to meet the associated required-on-site (ROS) dates for the operating seasons. These schedules reflect long lead timelines to accommodate the lengthy ocean voyages between the continental U.S. and foreign ports.
Via COMAIR	If circumstances prohibit shipment by sea, NSF may authorize ASC to ship cargo by COMAIR to Christchurch or Punta Arenas. This is the most expensive way to transport cargo and is used only for essential material that cannot go by sea. COMAIR shipments require justification and approvals that they provide sufficient benefits to warrant the added expense. COMAIR cargo is not authorized as a substitute for inadequate advance planning. Certain hazardous cargo items cannot ship COMAIR and must use COMSUR or ground transport.
As Hazardous Cargo	Explosives, gases, flammables, oxidizers, poisons, radioactive materials, corrosives and other hazardous items are forbidden in personal baggage or being sent via mail and cannot be hand-carried. These items must be shipped as hazardous cargo. Hazardous cargo must be packaged, labeled, marked and documented in accordance with applicable federal, international, military and USAP regulations. Contact the ASC hazardous cargo supervisor at MCM-USAPCargo-HazCargoSpecialists@usap.gov for more information. Transportation schedules are available on the USAP website at Grantees Support > Calendars and Schedules. The Peninsula Logistics Schedule provides cutoff dates for shipping to Palmer Station, which indicate when the cargo must be at Port Hueneme to meet the quoted delivery dates. The Continental Area Acquisition Schedule provides the timeline for cargo movement to McMurdo Station and South Pole Station.

Retrograde

Near the end of your stay in Antarctica, you will arrange with the USAP cargo representative at McMurdo Station or with logistics personnel at Palmer Station or South Pole Station to have your science cargo shipped to the U.S. The staff will issue you the appropriate documents and accept the cargo for shipment. You are responsible for insuring, packaging and crating the equipment and labeling the containers.

All such retrograde (i.e., return) cargo transports by ship via COMSUR, unless COMAIR is fully justified, approved in the SIP and authorized by the NSF representative at McMurdo Station or the NSF representative or designee at Palmer Station. Retrograde cargo is shipped COMSUR to a U.S. entry point and onward to its ultimate destination. The grantee pays shipping costs from the U.S. entry point to the ultimate destination as part of the grant.

It is your responsibility to insure your cargo against loss while in transit. You are entirely responsible for any items you mail or hand-carry.

Chapter 5

Travel Guidelines

This chapter covers travel and transportation for USAP participants, from pre-deployment travel and transit through New Zealand or Chile to flights, vessel travel and movement within Antarctica. It also outlines key requirements for baggage, ECW, visas, accommodations, aircraft and ship travel, and returning from Antarctica.



The Palmer Station global directional sign against a firey sunset behind the Marr Piedmont Glacier. Photo: Ken Keenan

General Advice

Mailing Illegal Items

Like any traveler, USAP participants must obey local laws, which differ from and can pose harsher penalties than those of the U.S. Persons found in violation of such laws are subject to prosecution in local courts. Association with USAP affords neither preferential treatment nor immunity from prosecution.

In particular, many governments have laws to prevent certain drugs and other materials from entering their countries and may imprison you

for life for transporting or mailing illegal drugs across their borders. At NSF's request, NZ Customs screens and inspects all mail destined for the Antarctic continent. As part of that process, NZ Customs has detained U.S. citizens returning from Antarctica, some of whom have been found guilty of and fined for mailing illegal materials.

U.S. law also prohibits the mailing of controlled substances, including alcohol and illegal drugs. According to Security of Mall In APO/FPO System Overseas (47 Fed. Reg. 14864 [Apr. 6, 1982]), which was made effective under Security of Military Post Office (MPO) Mail Overseas (47 Fed. Reg. 46976 [Oct. 21, 1982]), the U.S. is responsible for ensuring personnel authorized to use military postal facilities (e.g., the APO in Antarctica) do not abuse the customs, tax and other laws of the host country. As such, do the following:

- Obey the law.
- Do not try to take illegal substances through any country.
- Do not mail illegal substances.
- Tell your friends not to mail illegal substances to you.

Keeping Contact

While awaiting transportation to Antarctica from NZ or Chile, you must keep local program representatives informed of where you are and how they can contact you. Transport schedules are often revised on short notice.

Whether you travel to Antarctica by air or sea, be prepared for delays and schedule changes. Every effort is made to ensure the safety of USAP participants, including delaying departures or turning around flights due to bad weather, mechanical issues or ice conditions.

Exchanging Currency

Bank representatives at U.S. international airports will exchange U.S. for foreign currency, but you will usually receive a better exchange rate in the country where you intend to spend money. You can exchange currency at most banks in foreign countries, but remember that banks and stores may be closed on weekends and holidays. In Chile, rates can vary significantly between banks and currency exchange houses.

Debit cards can be used in NZ and Chile. Chilean and NZ banks will not cash personal checks drawn on U.S. checking accounts. A credit card with a chip is required in many stores.

Electricity

As detailed in Chapter 3, NZ uses 230-volt power, while Chile uses 220-volt power. A universal power adapter is ideal for powering your devices (e.g., hair dryers, electric razors)

while traveling. Laptops, phones and other personal electronics typically have a built-in voltage converter but still need a plug adapter for the outlet.

Traveling Before Deployment

Personal vacations before you deploy will not be ticketed or accommodated by USAP. Travel to NZ or the surrounding region done outside of NSF-approved business or ASC programmatic requirements and ahead of programmatic timelines is ineligible for reimbursement (e.g., arriving in NZ two weeks prior to your ice flight).

Participants who travel ahead at their own expense and vacation in NZ before departing for Antarctica must provide an arrival itinerary to ASC Travel in Denver and the Christchurch Travel Office at least three weeks before their scheduled flight to Antarctica. This allows both offices to arrange hotels and other accommodations in Christchurch before you arrive in NZ. Participants may not use NSF- or USAP-owned IT assets during predeployment vacations.

Traveling After Deployment

You may travel after leaving Antarctica and before returning to the U.S. NSF requires travelers to cover any extra expenses related to post-deployment vacations. This includes changes to airline ticketing, which could be significant. Participants are responsible for making their own leisure travel arrangements and must comply with local immigration and customs rules. When you visit a country as a tourist, USAP is no longer your sponsor. Participants may not use NSF- or USAP-owned IT assets during post-deployment vacations.

ECW Issue

USAP provides you ECW clothing and accessories at no charge at the CDC if you are flying from Christchurch to McMurdo Station or in Punta Arenas if you are heading to Palmer Station via Chile. The clothing is functional and sturdy. It includes special outerwear items (e.g., parkas, boots) that protect you in the Antarctic environment during emergency or survival situations. Most ECW is produced in men's sizes but fits persons of all genders. USAP also stocks ECW items for feminine physiques to ensure all participants have access to well-fitting clothes. Provide accurate measurements on the ECW form you submit with your travel/deployment forms. Also try on and test all ECW clothing at your fitting session (including boots) to ensure everything fits and works properly (e.g., check zippers). Any sizing errors will be corrected during the fitting.

Gaining weight in Antarctica is common, so select clothing that is not tight and can work with layers and size changes. No additional clothing will be issued once you are in Ant-



Three women finish trying on the multiple layers of ECW clothing that is issued to all deploying personnel. Photo: Elaine Hood

arctica. The type and amount of clothing you receive depends on your work type and location (e.g., indoor, fieldwork). Persons in certain roles will receive specialty ECW components, which double as outdoor/trade clothing.

Most but not all ECW clothing is mandatory. Participants who have recently deployed through USAP may substitute some or all of the USAP-supplied ECW gear with their own clothing if they provide an attestation that their personal gear is at or greater than the USAP standard. If you are new to the program, you must take all the clothing issued to you according to the USAP ECW policy.

Some issued clothing is subject to theft, particularly parkas. Take extra precautions to prevent loss. Abnormal damage or unreported loss of clothing will result in your being billed for its repair or replacement. Any theft or loss should be reported immediately to the NSF representative or station manager. It is illegal for you to mail, buy or sell government property, including USAP clothing.

Note: Participants deploying to Palmer Station should note that there is a considerable amount of rain and other precipitation on the Antarctic Peninsula. Account for this when packing your personal clothing. Additional guidance is available on the USAP website under Grantee Support > Travel and Deployment.

Transiting NZ

About a week before you arrive in Christchurch, the Christchurch Travel Office will email your hotel reservation and ECW clothing issue time, as well as information on taxis and shuttles. If you have a problem with mishandled luggage, file a claim with the airline at the airport of your final destination upon arrival. Retain a copy of your luggage claim form and advise the Christchurch Travel Office so it is aware of the problem.

ASC-ticketed participants are issued a "12-month Visa Letter" via their travel folder on Box that they should present to INZ upon arrival in NZ. Do not use the express passport kiosks in the airport as the machines will not provide a visitor's permit with an adequate length of time for most deployments.

The Christchurch Travel Office assists participants with immigration, visa, electronic travel authorities and passport queries. All USAP participants (e.g., contractors, seasonal employees, grantees) are entitled to a 12-month Antarctic Traveller Visitor Visa from INZ, regardless of how long or short their deployment. The Christchurch Travel Office confirms that recently deployed participants received the correct visa. Anyone inadvertently issued a three-month Visitor's Visa will be corrected to an Antarctic visa. INZ relies on the electronic record associated with your passport. You may or may not have a stamp. The 12 months permitted on an Antarctic visa can be spent in Antarctica or NZ (e.g., if you deploy four months, the other eight months can be spent traveling in NZ).

If you know you will exceed the Antarctic visa's 12-month limit while in Antarctica, do the following:

1. Send an extension request one month prior to expiration to ptservices@usap.gov.
2. CHC Travel will request an extension on your behalf.
3. You will be asked to send INZ a photo of your passport's information page.
4. The visa extension will likely end two weeks after your off-Ice date.
5. Further extensions may be granted in the event of flight delays.

If you want to travel in NZ after your 12-month Antarctic visa expires, do the following:

Apply for a Visitor's Visa through INZ. (The Christchurch Travel Office cannot apply for you.)

1. Any fees associated with the additional Visitor's Visa are the participant's responsibility.
2. The cost of the Visitor's Visa starts at NZ$341 and lasts up to six months for multiple entries or nine months for a single entry.
3. There is no reason the Visitor Visa will be denied.
4. If INZ requests a medical certificate, inform ptservices@usap.gov. This requirement most likely will be waived for USAP participants.

Accommodations

The Christchurch Travel Office manages hotel reservations in Christchurch for all participants. Do not make any changes to your reservation. If you do not honor your hotel reservation, the hotel will bill you for the first night of the booking. During busy periods, you may need to move hotels due to lack of room availability. If your Antarctic flight is canceled, ask the hotel's front desk whether you will need to change hotels.

If you plan to make your own hotel arrangements, provide a phone number where ASC Travel can contact you before you deploy.

Flight schedules frequently change, and it is critical that ASC Travel knows how to reach you with updates. Participants not ticketed by ASC should provide flight itineraries and accommodation information to the Christchurch Travel Office at ptservices@usap.gov.

Always keep your passport and valuables on you. Hotel bills should be settled the night before you depart from Christchurch. Grantees are responsible for paying for their accommodations. ASC pays for accommodations for its employees.

Health Care

If you need medical care in NZ, contact the USAP medical coordinator at Christchurch, who will assist you with arranging medical or dental appointments. There will be a charge for your visit to the doctor or dentist. See Chapter 2 for details about insurance coverage.

Transportation

An extensive network of bus routes serves Christchurch, Lyttelton, Christchurch International Airport and USAP offices. Taxi and shuttle details are provided in your arrival documents. If you rent a car, ensure you know NZ traffic regulations and have sufficient insurance. A booklet on traffic laws, the Road Code, is available at car rental agencies and online. Driving in NZ is on the left side of the road and requires strict attention. A driving permit is not required if you can provide a valid U.S. driver's license.

Flight to McMurdo Station

The flight from Christchurch to McMurdo Station is called your Ice flight, and the date you fly is called your Ice date. Report for your flight at the time assigned by the Christchurch Travel Office. You will be asked to designate one checked bag as a "boomerang bag" with personal items, toiletries, medications, clothing, shoes or sandals and other essentials for a one- or two-night delay. If your flight turns around (i.e., boomerangs) or is delayed after you check in, the boomerang bag is the only one that will be returned to you. As part of



Passengers and flight crew inside an LC-130 plane flown by the New York Air National Guard en route from McMurdo Station to Amundsen-Scott South Pole Station. Photo: Mike Lucibella

the check-in process, you will receive time to change into your ECW gear, pack your carry-on and boomerang bags, and store any baggage you will not need in Antarctica in the CDC secure storage room. Many participants often utilize a smaller suitcase or one of their orange ECW bags for the boomerang bag. It is critical to pack items you require daily (e.g., medications) either in your carry-on or boomerang bag.

Notify the ASC representative or the agent of any accompanied cargo or baggage that exceeds your authorized weight. Remember that authorization for excess baggage must be obtained in advance from ASC. This also applies to your northbound return. See Chapter 3 for more information.

You will be issued an Antarctic Departure Card, which you must complete before moving through to the APT. After dressing for your flight and completing your Antarctic Departure Card, take your luggage to the APT for official check-in, where your passport and departure card will be checked and your luggage weighed. This is commonly known as bag drag. Also keep your passport accessible.

After check-in, you will no longer have access to your baggage except the carry-on piece. You may not leave the area unless authorized by officials. Transportation to the aircraft is provided. Personnel who, in the judgment of the crew, are intoxicated will not be permitted to board the aircraft. This applies when traveling to or from Antarctica or when traveling within Antarctica.

The Ice flight takes five to eight hours, depending on the aircraft and winds en route. Military aircraft are not designed for passenger

comfort, though food and water are provided. There are also bathrooms, but they can be awkward. If your flight boomerangs before reaching McMurdo Station, typically due to weather or mechanical issues, the turn-around and return to Christchurch can result in a total flight time of 10 hours.

The weather in Antarctica when you arrive is likely to be clear, windy, cold and bright. After the plane lands, gather your possessions, zip up your parka and put on your sunglasses and gloves. Be ready for transport to McMurdo Station soon after disembarking. At the station, you will receive an arrival brief and instructions about your lodging and luggage. Generally, your checked luggage will be ready for you about two to three hours after you landed.

Travel Within Antarctica

Work time frames and transportation schedules for remote locations are planned well in advance. Grantees, NSF, implementers and transport schedulers agree on field plans published in Research Support Plans (RSPs) six weeks before participants deploy. All plans are subject to change given weather conditions and other circumstances. Grantees and ASC employees traveling to remote locations should read the USAP Continental Field Manual or USAP Peninsula Field Manual, which are available as PDFs on the USAP website under Grantee Support > Travel and Deployment.

Transportation to remote stations and field camps is provided by fixed wing aircraft, helicopters and ground vehicles. Teams planning to travel must meet with ASC Fixed Wing Operations or ASC Helicopter Operations to confirm flight plans and arrange personnel and cargo movements. Grantees and employees traveling to South Pole Station coordinate their trip with local area management. Because of limited berthing, all participants going to South Pole Station must be approved by NSF in advance of the trip. As with all operations in Antarctica, safety comes first. Mechanical problems and bad weather can delay or cancel missions.

Fixed Wing Aircraft

All cargo and passenger movements to and from deep field camps must be planned in detail with the cargo coordinator or with Fixed Wing Operations and approved by the ASC continental field supervisor. Intracontinental air support is currently provided by three types of ski-equipped fixed wing aircraft: LC-130 Hercules, Basler (modified DC-3s) and Twin Otter.

LC-130s are operated by the NYANG 109th Airlift Wing. These provide heavy lift capability to all inland stations and some field camps, as well as search and rescue (SAR) for the entire continent. Science project teams must first work with Fixed Wing Operations or cargo coordinators to develop their project's logistics plan, then coordinate with Science Cargo to stage their cargo. All project cargo must be staged and ready four days before their intracontinental flight if designated as general cargo and six days if designated as hazardous cargo.



Two people visit next to a helicopter at Lake Bonney, Taylor Valley, McMurdo Dry Valleys. Photo: Anne Beaulaurier

Passengers must check in at Air Services with all of their checked baggage, hand-carry bags and ECW the night before the scheduled flight. Passengers leave their checked bags at Air Services and keep their ECW and hand-carry bags with them. This is called bag drag.

Twin Otters are twin-engine, high wing aircraft used by small field teams deploying to remote locations that typically do not have groomed landing areas. The aircraft can carry small to moderate cargo loads. Basler aircraft are larger, twin-engine, low wing aircraft that can carry moderate loads for longer distances but have ski-field grooming requirements and other landing site restrictions.

Science project teams work with Fixed Wing Operations to develop a transport schedule and create cargo and passenger priority lists. The teams then work with Science Cargo to stage all cargo 72 hours before scheduled transport. On the day of the flight, science team members and ASC camp staff check in with Fixed Wing Operations before transporting personal bags to the airfield via the shuttle service. Both science and ASC team members assist flight crews with loading Baslers and Twin Otters. Be sure to provide accurate weights for all cargo, including personal bags, to Fixed Wing Operations.

Helicopters

Helicopters are used principally for logistical support in the Ross Island region and Dry Valleys. Anyone expecting to fly on a helicopter must attend helicopter safety training. Persons traveling to the Dry Valleys must also attend environmental training. Cargo capacity and flight range vary by type of helicopter. Science teams work with Helicopter Operations to arrange passenger and cargo movement. Detailed packing and planning guidelines, including field and mechanical equipment weights, are presented in the field manual noted above.

Aircraft Rules and Guidelines

- You must be manifested on all aircraft on which you travel. Any unauthorized travel may result in your removal from Antarctica.
- Your PQ must not carry a restriction to allow you to depart McMurdo Station. The destinations on continent you travel to depend on your PQ status.
- Be on time for flights. Departures will not be delayed for persons arriving late or for cargo or passengers identified after the deadlines provided by Fixed Wing Operations or Helicopter Operations.
- Special transport to or from airfields must be made in advance with the Passenger Services department at McMurdo Station to provide accountability of all passengers.
- Passengers can make a brown-bag flight lunch from the McMurdo Station cafeteria “grab and go” cooler before transport to the airfield.
- Do not consume alcoholic beverages before a flight. You will not be allowed to board the aircraft if you appear to be under the influence of alcohol.
- Consumption of alcoholic beverages is not permitted aboard any USAP aircraft.
- You must wear specific ECW gear for the flight. The requirements will be posted in advance of your departure.
- All hazmat must be packed and certified by USAP cargo personnel. You may not carry unauthorized hazmat in your baggage or on your person.
- Anyone flying on an intracontinental USAP aircraft, except to South Pole Station, must attend Antarctic Field Safety (AFS) training. See Chapter 6 for more information.

Return to NZ

ASC Employees

You will receive checkout instructions in the weeks before redeployment begins. Before completing your contract, your supervisor will schedule you on a flight from McMurdo Station to Christchurch.

Grantees

At least 10 days before your planned departure from Antarctica, advise the ASC passenger services representative at the MCC (BL140 at McMurdo Station) or the science coordinator at South Pole Station of your intended departure date. They will coordinate your departure with the Christchurch Travel Office. You must ensure that your retrograde cargo is ready for transport. See Chapter 4 for more information.

All USAP Participants

Removing any materials from Antarctica (e.g., rocks, wood, bone, eggshells, feathers, plant or animal parts) is prohibited unless specifically authorized by an NSF-issued permit. Prior approval is required for any baggage that exceeds the standard limits (see Chapter 3 for more information). If you check in for a northbound flight in McMurdo Station without the necessary excess baggage approvals, you will be required to mail the excess at your own expense via the post office on station, which may not be open in the time between bag drag and your departure. Also carry your passport with you and not in your checked bag.

Immediately upon returning to Christchurch, you must return your ECW clothing to the CDC. You will also retrieve any personal belongings you left in the CDC storage room. You will receive information about your Christchurch accommodations and onward travel at that time.

Transiting Chile

In Chile, USAP has contracted with Maersk to provide passenger support and manage local facilities. Chile, Argentina and the U.S. frequently cooperate in Antarctica. Argentina and Chile are Antarctic Treaty nations with year-round stations along the Antarctic Peninsula. Spanish is spoken in both countries.

Agents whom ASC employs to assist you in your passage through Chile commonly speak English, as do many Chileans. Still, having a Spanish phrase book or language skills may prove useful.



Former USAP research vessel, the *Nathaniel B. Palmer (NBP), docked* at the Palmer Station pier. Photo: Luis Huckstadt

Health Care

If you require health care while in Chile, contact the local Maersk representative for assistance with making appointments. Be prepared to pay for services provided. See Chapter 2 for more information.

Transportation

During deployment, you will arrive at the international airport in Santiago, pick up your baggage and process through customs. Afterward, you will be met by a Maersk representative wearing a red vest. They will direct you from the international terminal to the domestic terminal for your flight south to Punta Arenas. It is your responsibility to be alert for domestic gate changes, which may or may not be announced in English.

Once you arrive in Punta Arenas, a Maersk representative will transport you to your hotel and notify you of your ECW clothing issue time, ship embarkation time and ship orientation time. Arrive promptly to your appointments as the window to complete your outfitting is short and ship schedules are tight.

Maersk will provide you with a QR code card upon arrival that gives you access to the vessel through the Prat Pier security gate, allowing you to come and go easily between the city and

pier area. Most people traveling to Palmer Station will spend one night in a hotel and board the ship the following day. However, you may be asked to board the vessel immediately. Do not request to board the vessel early.

Hotel rooms for ASC personnel are directly billed, but you must pay for incidentals and meals. Grantees must pay for their hotel rooms. Nothing may be charged to the Maersk agent that has not been approved in writing by NSF.

The following Maersk agents can provide local information about restaurants, shops and money exchange:

Maersk Logistics & Services Chile SpA – Santiago
Andres Bello #2447, Floor 10
Edificio Costanera Center – Torre 2
Providencia, Santiago
USAP Cargo Contact Only: asc.scl@maersk.com or +56-2-230-9900
Emergency Contact: Octavio Ojeda at octavio.ojeda@lns.maersk.com or +56-9-7548-3739

Maersk Logistics & Services Chile SpA – Punta Arenas
Warehouse #4
Prat Pier O'Higgins #1385
Punta Arenas, Chile
Contact: asc.puq@maersk.com or +1-720-568-2870
Emergency Contact: Octavio Ojeda at octavio.ojeda@maersk.com or +56-9-7548-3739

Baggage and Gear

Given the limited space on the vessel from Punta Arenas to the Antarctic Peninsula, pack the clothing and personal items you will need on the journey into a single piece of baggage. The remainder of your baggage will be stowed in the ship's hold and returned to you on arrival at the work site. Only science equipment used in multiyear projects may be stored in the Punta Arenas warehouse, and only if approved in advance by NSF.

Traveling to Palmer Station

Persons heading to Palmer Station or onward to Peninsula research sites travel to Antarctica via support vessel. The transit takes four to five days based on routing and sea conditions. Before sailing, the ASC representative and ship's personnel will provide an orientation that includes ship procedures, safety policies and room assignments. Attendance is mandatory.

Ship transits are usually crowded, so comply with rules and show courtesy in common areas, passageways and dining areas. Remember that ships operate 24/7, and crew work and sleep at all times of day. Be considerate and quiet in passageways. There is no charge for meals aboard the vessel. If you are prone to motion sickness, consult with your personal physician before deployment. OTC medications (e.g., meclizine) are often sufficient to relieve

sea sickness. Bland crackers (e.g., saltines, soda crackers) and staying hydrated can also help.

Before disembarking at Palmer Station, clean your cabin and place all bedding in the laundry room to assist the ship's stewards. Take all your baggage and personal items with you when you disembark.

Return to Chile

ASC Employees

Your departure will be scheduled before you complete your contract. Notify the ASC administrative coordinator of any travel plans you have.

Grantees

At least three weeks before your scheduled return to Chile from the Peninsula, provide your northbound travel plans to the ASC administrative coordinator at Palmer Station. Identify any requirement for excess baggage or special handling of cargo. Airline and hotel bookings will be confirmed for you with the appropriate agent. Also ensure any retrograde cargo is ready for transport. See Chapter 4 for more information.

All USAP Participants

Upon departing Antarctica and arriving in Chile, you will be met by a Maersk representative who will give you your return itinerary and collect your ECW clothing. Generally, the clothing is collected on the vessel before docking in Punta Arenas and returned to the warehouse in bulk. Persons who intend to conduct personal travel post-deployment are responsible for their own transportation to the Punta Arenas airport and will not receive "meet and greet" service in Santiago.

Chapter 6

Living and Working in USAP

USAP participants must put safety and environmental protection first while in Antarctica. They are also responsible for their own behavior and conducting themselves responsibly. This chapter covers details of work and life within USAP.



A pilot carries blue flags from a Twin Otter airplane to a collection of fuel drums where the flags will be placed to mark their location. Photo: Brian Bezalel

Work Expectations

At USAP stations, the typical workweek is 54 hours (nine hours per day, Monday through Saturday). Aboard vessels, at field camps and on traverses, the workweek is 84 hours (12 hours per day, Monday through Sunday. Expect there to be times when you must work more hours or an atypical schedule, assist others in their duties or assume community responsibilities (e.g., washing dishes, cleaning bathrooms). Due to the challenges of working in Antarctica, the type, location and duration of your work are subject to change. Remember that our collective aim is to support science, maintain the station and ensure the well-being of all participants.

Workplace Safety

USAP is committed to safe work practices and safe work environments. There is no operation, activity or research worth the loss of life or limb — no matter how important the future discovery or emergency response may be. Proactively take all safety measures to help protect participants. If you require safety assistance, stop by the Safety Office at any stations or email the following:

All Locations: DEN-SafetyandHealth@usap.gov

South Pole: SafetyEng@southpole.usap.gov

McMurdo: MCM-Safety-Staff@usap.gov

Palmer: DEN-SafetyandHealth@usap.gov

Harassment and Assault

USAP also strives to build a workplace that is free from harassment and assault at all USAP locations on or off the continent. If you have experienced sexual assault or harassment, help is available. See the Appendix for support resources. USAP will not tolerate the physical or verbal abuse of any person, including but not limited to harassment, stalking, bullying or hazing of any kind, whether the behavior is carried out verbally, physically, electronically or in writing. If you feel that someone is creating a hostile work environment or engaging in harassment, report it to any of the following:

- USAP Confidential Victim Advocate
- NSF Sexual Assault and Harassment Prevention and Response (SAHPR)
- NSF Station Manager / Special Deputy U.S. Marshal
- NSF Antarctic Helpline (24/7 Crisis Intervention and Support)
- Station or camp management
- Your employer's HR

Standards, Risks and Reporting

Each person has a role in safety. Although work in Antarctica poses risks, no person is allowed or required to expose themselves to unmitigated danger while working. All USAP participants are responsible for performing their work safely and ensuring they have all the safety and occupational health (SOH) training, appropriate tools, PPE and other hazard protections necessary to do so.

Supervisors are responsible for the safe conduct of all work under their control. They shall be familiar with all codes, standards and regulations relevant to their work and ensure that such requirements are strictly enforced. These include all applicable Occupational Safety and Health Administration (OSHA) standards, applicable host nation requirements and USAP procedures.

For emergencies in Antarctica, it may take hours or days before help arrives. If you are injured, seek medical attention first. Any participant who suffers an injury or is involved in or witnesses an incident, no matter how minor, must report it to their supervisor, scientific



A participant enjoying the final sunset before winter at South Pole Station. The South Pole experiences six months of continuous winter darkness because the Earth tilts away from the sun during those months. Photo: Jeff Capps

leaders, the ASC safety representative, station management or NSF representative, according to USAP standard operating procedures and OPP SOH guidance. An "incident" includes but is not limited to injuries, spills, near misses and unsafe conditions or practices. Anyone with concerns that unsafe work conditions are not being addressed after one of the above parties was notified is encouraged to file a confidential complaint with the NSF OPP safety officer by emailing oppsafety@nsf.gov.

All employees, grantees and guests are also encouraged to speak up when an unsafe condition or practice is observed. The person aware of the condition should immediately notify the affected personnel and the responsible supervisor or relevant leadership, to remove anyone at risk of harm. If someone reasonably believes working conditions present an immediate danger to life or limb, they have the right, responsibility and authority to stop such work activity.

The "Occupational Safety and Health Act of 1970" provides employees protections against discriminatory or discharge actions for exercising their rights under the law. The law prohibits retribution toward any employee or researcher who reports an unmitigated hazard, unsafe condition or unsafe practice. USAP participants must encourage a culture of reporting without retaliation. If you have people working for you, be sure to do the following:

- Ensure your staff have the resources and support to do their job safely.
- Ensure your employees are properly trained, work safely, maintain safe conditions and are aware of changing circumstances, conditions, deviations or

procedural drifts that may affect the safe working environment.

- In the event of an injury or incident, complete an injury or incident investigation report and take corrective actions to prevent reoccurrence.
- Ensure your staff have the support and medical care needed if they are ill or injured. File the report on the day of the incident or injury and no later than 24 hours if additional confirming information is required.

Fire Prevention

Fire can pose a serious threat to lives given shelter is critical to participants' survival in Antarctica. No person or entity shall tamper with, cause damage to or interfere with the effectiveness of any fire detection or protective equipment or devices. Because of the dry and windy conditions on the continent, fires start easily and spread rapidly. Most fires are caused by carelessness, poor housekeeping or faulty electrical or mechanical operations. All USAP participants must take the following precautions to eliminate fire hazards:

- Understand and obey fire prevention rules.
- Attend fire prevention trainings.
- Become familiar with your surroundings.
- Respond rapidly to any alarms.
- Know and follow evacuation and muster plans.
- Know how to locate and operate extinguishers.
- Understand how and where to report a fire.

Injury Prevention

The five most common injuries in Antarctica are as follows:

1. Sprains and strains
2. Contusions (i.e., bruises)
3. Lacerations (i.e., cuts)
4. Repetitive-motion or overuse injuries
5. Fractures from slips, trips or falls related to ground conditions and footwear choices

If you do have an injury do not hesitate to obtain immediate medical attention from ASC Medical. Afterward, report the injury as soon as practicable. Reporting and analyzing incidents are the best way to prevent future injuries, improving field risk management via lessons learned and best practices among peers. Sharing mishaps is a service to the community by helping others avoid similar incidents.

Footwear

The Antarctic environment will cause your footwear to lose its coefficient of friction, making you more prone to slips and falls. A rising trend in season-ending compound fractures has been attributed to footwear choices and colder temperatures. This includes personal footwear during off-work hours. Exercise caution when walking, and be aware that colder or warmer temperatures will affect the grip of your soles. Past participants have reported that oil- or slip-resistant soles were more prone to slips and falls outdoors than other sole compositions.

Traction devices, diligent walking and attention to surface conditions are encouraged whenever the conditions warrant. Allow enough transit time between meeting and work locations to avoid rushing, which can raise the risk for slips and falls. Traction devices are available in many supply locations, work centers and safety offices. Common sites for slips and falls are the exterior entrances of buildings and work centers. Do your part to mitigate unsafe conditions by shoveling, surface chopping, spreading fines or using other means available at your location.

Diving

Some science projects in Antarctica require scuba or surface-air-supplied diving. Polar diving poses unique risks, including extreme cold, few entry and exit points, various types of ice, potentially dangerous marine life, low light or visibility and contaminated water. Antarctic diving requires special training, experience, an on-site diver orientation, proper equipment and a thorough and realistic dive plan. All diving under USAP requires prior approval from NSF, which starts with submitting a dive plan per USAP's Standards for the Conduct of Scientific Diving.

If the PI's home institution has a diving safety officer, they must comment on and approve any request to dive in Antarctica. The OPP diving safety officer or another NSF designee issues the final authorization. NSF may require additional training or modifications to the dive plan before approving the dive. Dive plan forms and diver information sheets are available in the dive section of POLAR ICE.

A variety of diving equipment is available at McMurdo Station and Palmer Station, including scuba tanks and backpacks, weight belts, weights, regulators, dive computers and compressors. PIs must specifically request the use of any NSF equipment in their SIP during preseason planning. Recreational diving is not permitted. The Antarctic Dive Guide contains reference tables and information on certification, dive sites, environment, operations and emergencies.



A USAP field coordinator, gives a presentation on field safety techniques at McMurdo Station. Photo: Elaine Hood

Training

Field safety training is a critical element of proper risk management, which is key to a safe workplace. As such, USAP provides basic training in cold weather survival skills that covers the following:

- Risk assessment and management
- Cold weather camping
- ECW use
- Hypothermia and frostbite
- Working on sea ice
- Altitude awareness
- Glacier travel

USAP also instructs field teams on using equipment and gives them the chance to work together, perhaps for the first time, before heading into the field. This is an excellent opportunity for team leaders and members to learn about others' strengths and weaknesses.

Generally, people leaving the established road system in and around McMurdo Station must complete training based on their anticipated exposure and previous experience and training. Some courses are tailored to the needs of each team (e.g., Dry Valleys or sea ice work, distance travel by snowmobile).

Courses are not intended to develop advanced field skills (e.g., mountaineering, traversing crevasse fields) but to familiarize you with situations you may encounter during your deploy-

ment. Leaders of remote field projects aim to select team members with wilderness survival skills, and at least one field safety coordinator should be present to oversee any activities that occur on technical terrain.

There is some risk of injury during training. Instructors are responsible for conducting their training safely, so both trainees and observers in the training area must follow the instructors' directions at all times.

Courses at McMurdo Station

Antarctic Field Safety	Annual AFS training is required for all personnel who will travel to a remote field setting, off established roads and trail systems or in a helicopter and for all McMurdo Station winter-over personnel.
Sea Ice Safety	This course is required for all personnel who will independently work or travel on sea ice. Those who have taken the full course within the previous five seasons need only take the sea ice refresher course.
Altitude Safety	This course is required for all McMurdo Station-based personnel who will work at or above an elevation of 2,438 meters (8,000 feet) without a helicopter remaining on site.
Glacier Travel Safety	This course is required for all personnel whose work requires travel in steep or crevassed terrain above the firn line or on active glaciers.
GPS Training	The global positioning system (GPS) class is required for all grantees working on sea ice and is highly recommended for all ASC participants who work on sea ice or the ice shelf during winter or WinFly.
Outdoor Safety Lecture	The Outdoor Safety Lecture (OSL) is required for all personnel who want to participate in recreational activity, such as hiking and skiing, in the immediate area surrounding McMurdo Station. The lecture covers rules and guidelines for safe travel and explains the check-in/checkout process.

Shakedown Courses	Customized courses are required for persons going to unestablished field camps that lack 24-hour heated buildings and easily accessible food and water. The Deep Field Shakedown is intended for camps based on snow. The Dry Valleys Shakedown is for camps based on rock or ice. The AFS must be completed before taking either shakedown course.

Courses at Palmer Station

Small Boat Passenger Training	
Small Boat Operator Training	This annual class is required for all small boat drivers.
RHIB Competent Crew Training	The rigid hull inflatable boat (RHIB) class is required for personnel who will conduct research or travel as a passenger on RHIBs.
Islands Survival	This class is required for all small boat operators and is recommended for frequent small boat passengers.
Backyard and Glacier Travel	This video is required for personnel who visit the Backyard or the glacier behind Palmer Station.
Peninsula Field Safety	This annual class is required for all personnel who will work on islands or sea ice from a vessel. Marine staff receive annual field training as part of marine orientation. Grantees receive field training before their cruise or aboard ship before going ashore. The USAP Peninsula Field Manual provides information on field party preparation, safety training, transportation safety, radio usage, weather, shelters, sea ice, glacier travel, rescue and other topics.

Health Hazards

Antarctica's extreme environment and relative isolation can challenge human health and wellness. Chapter 2 details the rigorous screening that candidates must undergo before deploying and the limited medical care available on continent.

Dehydration

Most of Antarctica is a polar desert. In this dry environment, people lose significant amounts of water via their skin and breathing. The mucous membranes lining the nose and mouth become dry and ineffective at protecting against viruses. You must increase your fluid intake in Antarctica, even if you do not feel thirsty and especially if you are physically active. Also avoid consuming large amounts of caffeine or alcohol, which are diuretics that will increase your dehydration.

Note: Chocolate and many soft drinks contain caffeine.

Viral Respiratory Infections

Colds and flus are often exacerbated by the extreme dryness of Antarctica and can be severe. Eating well and getting plenty of sleep, exercise and fluids will help you stay healthy during your deployment. Research strongly suggests that maintaining an adequate level of vitamin D in the blood may reduce the frequency and severity of these infections. Consult with your personal physician at home regarding your blood level of vitamin D and the proper daily dose. Vitamin D3 is not always available at Antarctic stores, so pack an adequate supply before deploying if you need it, along with any other OTC medications (e.g., aspirin, ibuprofen, cold medicine, cough drops). See Chapter 3 for more information.

To limit your own and others' exposure to illness, cough and sneeze into your elbow to prevent spreading germs into the air or on your hands, do not share cups and eating utensils, and wash your hands frequently, including every time you visit the food service line.

Sunburns

Snow and ice reflect 85% of UV radiation. Overestimate the protection you need, and carry a sunscreen with SPF 15 or greater that includes both UVA and UVB protection. Reapply frequently according to the product's directions.

Altitude Sickness

South Pole Station and some field camps are at elevations exceeding 2,740 meters (9,000 feet) above sea level. The short flight from McMurdo Station to these areas is not enough time for people to acclimate. The effects of altitude can begin at elevations of 1,830–2,440 meters (6,000–8,000 feet). Consult with your physician before deployment about whether any high altitude areas you will visit can affect any pre-existing medical conditions you have.

Signs of altitude sickness include shortness of breath that is not promptly relieved by resting, headache, dizziness and difficulty sleeping. Avoid strenuous activities for the first two days after arriving at high elevation, increase fluid intake, stop or limit smoking, and avoid alcohol and caffeine. Altitude sickness can occur as late as five days after reaching altitude and occasionally progress to a serious or life-threatening condition. Anyone with symptoms should consult the local medical provider.

Acetazolamide is a preventive medicine that can be taken starting up to 24 hours before leaving for high altitude. This drug is available at the McMurdo Station clinic and should not be taken by persons allergic to sulfa medications.

Poor Eyesight

Field work will be prohibited if you are not wearing appropriate prescription eyewear. Serious injuries and deaths have occurred because participants could not see well. See Chapter 3 for details about contacts and prescription eyeglasses.

Snow Blindness

Antarctica receives high levels of UV light, which can cause a serious, painful and disabling condition known as snow blindness. Prevent it by wearing 100% UV protective sunglasses. UV-protective snow goggles are issued to persons who need them. See Chapter 3 for more information.

Smoking

Besides its well-known health hazards, smoking greatly increases your chance of dehydration. Smoking is prohibited in all indoor areas at the three USAP stations. The indoor ban includes vaping handheld devices such as e-cigarettes. There are designated outdoor smoking shelters. Discard cigarette butts in the appropriate containers, not on the ground.

Recreation

While meant for enjoyment, recreation can pose health risks too. The OSL or other appropriate training is required for all participants before they recreate off station.

Note: The equipment you are issued for work is not authorized for recreation. Use U.S. government equipment only to accomplish your approved work.



The annual Ross Island Marathon is competed entirely on the snow-covered Ross Ice Shelf route to the airfields. Photo: Nicki Klein

Personal Conduct

Conduct guidelines and operational procedures in Antarctica vary considerably by location, weather and other characteristics. Familiarize yourself with local knowledge at your station or camp and follow local rules. As written guidance cannot cover all circumstances, you must use good judgment to choose and adapt your activities to avoid injury to yourself and others. Antarctica, every part of it, can suddenly and unexpectedly become a dangerous place.

Participants must also conduct themselves in a professional manner that reflects well on themselves and USAP, whether in transit, on station, aboard a vessel or in a field camp. Strictly adhere to NSF's Polar Code of Conduct, which can be found on the OPP website. Violations will result in disciplinary actions, up to and including removal from Antarctica, termination of employment, or other administrative, civil or criminal enforcement actions.

Alcohol and Drugs

A limited amount of alcohol is available for purchase at USAP stations. Alcohol or drug intoxication impairs people's judgment and function.

NSF does not tolerate abuse of alcohol or drugs, including controlled, prescribed and OTC medications. Employees in active working

status can be tested for alcohol if there is reasonable cause. Disciplinary action, up to and including termination, may occur if a person is determined to have any amount of alcohol in their system while on the job. Existing grants are subject to revocation in the event of substance abuse. Further, persons under the influence of alcohol or other controlled substances will not be allowed to board USAP aircraft or ships. All participants must strictly adhere to the USAP Alcohol Policy which can be found on the OPP website.

U.S. Criminal Jurisdiction

The "Comprehensive Crime Control Act of 1984" (18 U.S.C. § 7) extends special maritime and territorial jurisdiction to offenses committed by or against U.S. nationals in areas not under the jurisdiction of other states. As the U.S. does not recognize territorial claims in Antarctica per the Antarctic Treaty, the act establishes that persons can be prosecuted in a U.S. federal court for violating U.S. criminal law in Antarctica. The NSF station manager at McMurdo Station is a sworn special deputy U.S. marshal with jurisdiction across Antarctica.

Utilities

The Antarctic environment requires close attention to aspects of life easily overlooked at home. Services typically taken for granted — abundant electrical power, plentiful potable water, ample food, convenient transportation and timely, easy waste disposal — are expensive and difficult in Antarctica. Resource conservation is imperative if the U.S. is to continue supporting science programs in Antarctica. To preserve Antarctica for future research and discovery, USAP participants must be careful about what they bring, use and throw away. Regulations for waste management under the ACA require vigilance in how we consume services and handle trash.

Waste Management

Waste disposal is far more stringent in Antarctica than the U.S. Every work center must schedule a briefing on the waste management program, and all personnel must sort their own trash. Marked receptacles are located in work centers and lodging areas for separating solid waste (e.g., cardboard, recyclables, metal) and hazardous waste (e.g., batteries, aerosol cans, fuel, oil).

Given the climate and remoteness of Antarctica, everything required to work and survive there must be shipped or flown in. The reverse applies to USAP waste, all of which besides wastewater is taken off continent for proper disposal. This reduces the environmental impact of the sizable human presence in Antarctica, where the cold, dry conditions often preserve rather than degrade things. Less

waste means less waste handling and more resources to support research within USAP.

Power and Water

Power at all three USAP stations is provided by diesel-powered generators that deliver electricity to buildings at U.S. voltage (120 volts, 60 hertz). McMurdo Station also uses renewable energy produced by wind turbines operated by Antarctica New Zealand. Reliability is good, but surges and outages can affect electronic equipment. Energy constitutes a significant operational cost for USAP, including to produce potable water.

Fresh water at McMurdo Station and Palmer Station is made from seawater using reverse osmosis. At South Pole Station, a Rodriguez well produces fresh water from melted ice, but production capacity is limited and water conservation is critical. Residents at South Pole Station are restricted to two, two-minute showers per week. Although there are no such restrictions at the other stations, everyone is expected to make efforts to conserve both energy and water.

Technology

As part of your work in Antarctica, you may have access to or be responsible for various types of IT and communications, including operational technologies and industrial control systems. You may also be deploying with your own personal devices (e.g., smartphone, tablet, laptop). All USAP participants must work to protect the USAP network and USAP information and are subject to USAP information security policies.

Listed below are NSF-owned or ASC-managed services and devices that are part of USAP operations and managed by the Information Technology & Communication (IT&C) department for both work and personal activities. More information is available on the USAP website under Program Operations > Information Technology and Communications Services. Contact ITCEnterpriseServiceDesk@usap.gov for troubleshooting or to report a security or privacy issue.

Computers and Related Devices	All government-owned or -furnished devices (e.g., workstations, laptops, tablets, mobile phones, printers, scanners).
Satellite Communications Services and Devices	All government-owned or -furnished network capabilities (e.g., wired or wireless networks) used for science, operations or morale activities, as well as devices used to provide those capabilities.

Satellite Communications Services and Devices	All government-owned or -furnished satellite communications services (e.g., station satellite links used for science, operations or morale traffic, USAP-managed Iridium phones, Starlink service at stations).
Radio Communications Services and Devices	All government-owned or -furnished radio communications capabilities (e.g., pagers or radios issued for station operations or certain morale activities, radios for field parties to communicate with the station, radios for hikers on Ross Island).

Note: USAP stations have less bandwidth for internet traffic than what is commonly available in the U.S., and internet service may be down at times throughout the day.

IT&C Policies

Your use of USAP IT&C services is governed by the policies described in Acceptable Use of USAP Information Resources (AIL-POL-5000.06), the NSF USAP Rules of Behavior (ROB) incorporated as appendix A, and the NSF Policy for Social Media incorporated as appendix B. Violating these policies, whether you are using a government-issued or -furnished service or device for work or personal activities or using your personal device while it is connected to a government-furnished network, violates the Polar Code of Conduct.

Acceptable Uses

Telecommunications use must not violate U.S. Executive Order 13513, which forbids federal employees from sending text messages while driving. Occasional personal use of NSF-supplied technology and communication resources is allowed when the cost to the government is negligible and the personal use does not interfere with official business. This personal use must not offend coworkers or be for gambling or illegal activities (e.g., distributing copyrighted materials or media).

USAP mission activities always take precedence over personal activities. NSF reserves the right to restrict or otherwise limit personal use of IT&C capabilities based on resource availability, conflict with official business or unacceptable information security risks. See Acceptable Use of USAP Information Resources for more information.

Prohibited Uses

Prohibited uses of USAP IT&C capabilities include all illegal activities, any activity that could adversely affect NSF or U.S. government interests or interfere with the USAP mission

and processing of classified information. Under no circumstances is it permissible to access or download material that would create a hostile or offensive work environment (e.g., racist or sexually explicit material). You are prohibited from seeking, transmitting, collecting or storing obscene or pornographic material, as well as defamatory, discriminatory, harassing or intimidating material that could discredit NSF or damage its public reputation. See Acceptable Use of USAP Information Resources for more information.

Computer Screening

All devices you bring when you deploy must be screened to ensure they meet USAP requirements before they can connect to the USAP network. This includes your personal, company or university devices (e.g., computers for science experiments, mission operation systems, workstations, servers, laptops, notebooks, tablets, smartphones). All devices must continuously maintain compliance with USAP requirements, including keeping up with software updates and regular anti-malware scanning. Any device that falls out of compliance (e.g., outdated antivirus definitions, patches or vulnerability remediation) may be disconnected without notice if NSF determines there is an unacceptable level of risk or threat to the USAP IT environment. More information is available on the USAP website under Program Operations > Information Technology and Communications Services.

Television and Radio Services

The cable television and broadcast radio stations at McMurdo Station are affiliates of the American Forces Network (AFN) and receive technical support and programming under the direction of the Defense Media Activity. AFN programming for the television station includes a variety of news, sports, movies and general entertainment, and the Navy Motion Picture Service provides movies. Additional channels may include programming from other sources, as well as local programming that provides information vital to station operations, including the emergency alert service, weather and flight information, the dining menu and other community information. The radio station broadcasts AFN feeds consisting of popular music, news, talk radio and local programming designed by volunteer DJs from the community.

USAP Email

ASC will provide you a USAP email address, if required, when you arrive on station. Work-related emails cannot exceed 20 megabytes (MB) in size. If you need to transfer a file that exceeds 20 MB for business or scientific purposes, contact the local IT&C Service Desk.

Grantees are not assigned a USAP email address unless it is requested in their SIP or

upon arrival. If a USAP email is not requested, all local mail is sent to the email address specified in the project's SIP. You may continue to use your private email account for non-work activities. Be aware that you are using USAP bandwidth and resources and must adhere to the ROB. Email service varies by station.

Telephone Services

USAP stations access commercial and government satellites for transmitting data and voice. Telephone service is available for business and private use, with official communications prioritized. Satellite systems are reliable, but service outages do occur. Free long-distance calls to the U.S. are allowed from all stations. At South Pole Station, telephone calls can easily be made only when there is active satellite coverage. Coordinate with the local IT&C Service Desk to arrange for emergency calls outside of satellite coverage times.

Station Intranets

Each USAP station has a station-specific intranet (i.e., internal website). The intranets serve as a central repository for the latest station-specific announcements, updates, scientific endeavors, flight and vessel information, community events, recreational activities, online tools and resources, services and more. The intranets also provide access to the local deployment of the USAP Master List, a library of standard operating procedures, manuals, policies and more.

Station Bandwidth

The satellite infrastructure used for off-continent communications in Antarctica is limited, with bandwidth constraints for station operations, science and morale activities. While each station has internet services, they are considerably slower than those available in much of the U.S. Large downloads and streaming media negatively impact everyone else within USAP. As such, be sure to download any desired software, music or videos to your devices before deploying.

At South Pole Station, internet access and real-time USAP email is available only during periods of active satellite coverage. Emails transmitted when there is no coverage are delivered during the next satellite pass. For the satellite schedule, see the USAP website. Contact the local IT&C Service Desk if you need to send business, science or emergency emails outside of satellite coverage. Personal satellite terminals (e.g., Starlink kits) are prohibited at all USAP locations.



A USAP participant gazes at Mount Erebus, the southernmost active volcano on Earth. Mount Erebus is the dominant feature of Ross Island, accounting for the island's rocky volcanic terrain. Photo: Greg Neri

Video Chat and Social Media

While high-bandwidth mission activities can be supported with prior coordination (e.g., through the science planning process and POLAR ICE), participants should not expect services for non-mission activities. Zoom, FaceTime, other video chat applications and social media apps are restricted on the USAP operations network because they severely impact the bandwidth available for science and operational traffic.

Many high-bandwidth and inappropriate sites are blocked or deprioritized to support mission-essential traffic. Texting, personal shopping and social media use are restricted to the USAP public network, though reliability of this network is not guaranteed 24/7. Additional guidelines regarding social media use are available on the USAP Master List.

USAP Public Network

NSF continues to implement IT&C capabilities to help you manage your personal life. You can use your smartphone on the USAP public network for personal texting and calling via Wi-Fi.

You must enable Wi-Fi calling before you leave the U.S. All activities conducted on the public network, even with your own personal device,

must abide by the Acceptable Use of USAP Information Resources and ROB.

Radio Communications

Each station uses handheld and vehicle-mounted very high frequency (VHF) radios for local communications. Based on your work duties, you may be issued a pager along with or instead of a handheld radio. Observing radio etiquette is necessary to ensure efficient and available radio communications. Keep messages short and professional. For more information on proper radio etiquette, contact the Communications group on station.

Before leaving for a lengthy field deployment, or even for a day, you must inform station Communications of your intentions, so frequencies and call signs can be assigned and check-in procedures arranged. To avoid unnecessary SAR missions, you must make every effort to adhere to the established check-ins. Immediately upon returning from the field, inform station Communications that you have returned safely.

Radio communications use and procedures also apply to any leisure activities that take you out of the main station area. For example, you may be required to have a radio with you while you are hiking on approved station trails. See the station intranet for more information on when activities require you to use a radio.

Smart Card

A USAP-issued smart card is required to access USAP computers. You will be issued your USAP smart card during the deployment process. Contact the IT&C Service Desk at your location if you lose your smart card or it stops working. Smart cards must be returned upon redeployment.

Removable Media

NSF restricts the use of removable storage devices (e.g., thumb drives, external hard drives) on USAP workstations. If use of such devices is required for operations or science tasking on a USAP-managed workstation, submit a request to the local IT&C Service Desk. Users will be unable to connect removable devices until authorized. For more information, see the Removable Media FAQs on the USAP website under Program Operations > Information Technology and Communications Services.

IPv6 Migration

NSF and ASC are upgrading the USAP IT&C environment to support Internet Protocol version 6 (IPv6) at all locations. Ultimately, all USAP IPv4 addresses will be retired. This means that any software application you may be using on your personal device must be able to run using IPv6, or it will not work while you are deployed. For more information, see the USAP website under Program Operations > Information Technology and Communications Services.

Endorsing Products or Services

NSF and USAP cannot appear to endorse a product or service or to take a political stance on issues. Photos taken of participants holding a commercial product while standing in front of an NSF or USAP logo, signage or other federal property may imply endorsement and should be avoided. It is permissible to have a photo taken while wearing a USAP-issued red parka in front of a sign with an NSF or USAP logo on it. However, promoting a product or political stance next to that logo is prohibited. For more information, see the USAP Social Media Cheat Sheet (COM-ATT-0001) available on the USAP Master List.

Postal Services

U.S. domestic postal rates and regulations apply to all APO mail to NZ, McMurdo Station and South Pole Station. There is no APO service to Palmer Station or vessels. Postage stamps can be purchased at all stations, but participants are encouraged to bring their own. Registered mail service is not available. All NSF- and ASC-sponsored participants are granted use of the APO in Christchurch for 10 days after arriving in NZ from the U.S. and for another 10 days upon returning from Antarctica. This benefit provides a tremendous cost savings if you need to mail packages to the U.S. from NZ.

The Christchurch and McMurdo Station (South Pole Station as of January 1, 2027) APOs accept only debit and credit cards. The Christchurch APO distributes only packages received via the U.S. Postal Service. This means you cannot order items via the internet for courier delivery (i.e., FedEx) to you in Antarctica. Neither the Christchurch APO nor USAP offices will accept such deliveries. In addition, APOs cannot be used to support any type of commercial activity. It is illegal for you to ship items to Antarctica for resale under U.S. federal law.

Mail is received in Christchurch seven days a week. Letter mail (i.e., flat mail) is transported from Christchurch to Antarctica on southbound flights as space allows. NSF prioritizes science cargo and flat mail over personal packages to and from Antarctica. Flat mail delivery generally takes 14–21 days, though it can take longer based on the time of year. Personal packages can take three months or more in the summer. If you will be in Antarctica for only the summer, you may not receive boxes you sent yourself until you are about to leave. Do not place



The Ocean Giant cargo ship docked at McMurdo Station delivering materials and supplies. Photo: Lauren Lipuma

medications in package mail, and do not send perishable foods.

Mail for delivery during WinFly (usually in August) should be sent after the first week in July, or it will be returned. WinFly transportation and space for parcel mail is limited. If space is not available for your package, it will be held in Christchurch until space allows during Mainbody.

Packages destined for summer participants at McMurdo Station or South Pole Station must be mailed after Labor Day and before October 15. Mail that misses participants is forwarded if a directory card has been given to the U.S. Post Office in McMurdo Station or is returned to the sender.

Mail and packages destined for winterovers who will be arriving at the end of summer should be mailed after Christmas so the items do not displace mail for summer participants. In addition, the APO at McMurdo Station will hold mail for only 30 days. In winter, there is no mail service to South Pole Station and only limited mail to McMurdo Station.

Do not use single-use packing material (e.g., packing peanuts) to cushion mailed contents. Instead, use clothing or something similarly useful that will not enter the waste stream or pollute the environment. Do not rely on mail service for critical business, as delivery timing is subject to weather, transportation options, cargo space, forwarding and your movement between locations.

Prescription medications should be mailed to you by your doctor or pharmacy in envelopes, not boxes, to ensure arrival as flat mail via courier (an international freight forwarding

company). Do not mail medications via the APO service as it is not given special priority and may take more than three months to reach you.

All mail going to McMurdo Station, South Pole Station and surrounding field camps is subject to customs, agricultural and drug inspections as it passes through Christchurch. For a complete list of prohibited and restricted items (e.g., alcohol, batteries, perishables, flammables, drugs, knives, corrosives, vape), ask your local post office for a copy of Publication 52 – Hazardous, Restricted, and Perishable Mail. The U.S. Postal Service may prosecute persons who improperly mail items.

Near the end of their season, many participants have more items than they will be allowed to carry on their northbound flight. This excess must be sent by mail. Pay attention to announcements about mailing deadlines and procedures for mailing personal packages from Antarctica. Timelines and options differ by station and time of year.

McMurdo Station Mail

McMurdo Station provides basic postal services and sells stamps. "Cash on delivery" and registered mail services are not available. During the summer, the post office operates regular hours. Winter operations have limited hours. Payment is by debit or credit card only.

Address mail to:

<*Your Name*>
PSC 769 Box 700
APO AP 96599-9998

If filling out an online shipping form, enter "APO" as the city and "AP" as the state.

South Pole Station Mail

South Pole Station provides basic postal services and sells stamps. Registered mail and money orders are not available. Mail sent to South Pole may be transported by resupply aircraft and routed through McMurdo Station.

The post office operates during regular hours in the summer. There are no winter operations. Effective January 1, 2027, payment is by debit or credit card only.

Address mail to:

<*Your Name*>
PSC 768 Box 400
APO AP 96598-0001

If filling out an online shipping form, enter "APO" as the city and "AP" as the state.

Palmer Station Mail

Palmer Station does not have a post office, but stamps are sold on station. Senders may mail letters or packages smaller than a shoebox to ASC approximately two weeks before the ship's departure from Punta Arenas. There are only a few ship deliveries available each season. All packages must include a packing list, which will be opened and inspected before delivery. Because there are few opportunities to send mail from Palmer Station, plan accordingly.

Address mail to:

<*Your Name*>
Palmer Station c/o ASC
7400 S. Tucson Way
Centennial, CO 80112-3938

New Zealand USAP Private Bag

The USAP Private Bag service allows personnel to receive mail and personal parcels from New Zealand. Mail must be sent through NZ Post only; NZ domestic rates apply.

A U.S. Customs Declaration must be affixed to the package. Do not use the NZ Customs form. If the required declaration is missing, the Christchurch Distribution Center may hold the mail until the recipient returns from Antarctica, unless the mail is deemed excessive, restricted, or otherwise unacceptable.

Address mail to:

<Your Name>
NSF McMurdo Station
Private Bag 4747
Christchurch 8140

Do not use the Private Bag to mail large quantities of personal goods. All mail must comply with U.S. Publication 52 – Hazardous, Restricted, and Perishable Mail.

The Private Bag can sometimes be used to hold U.S.-mailed items in Christchurch for deployed participants. Additional costs, duties, and inspections may apply. The Christchurch APO postmaster may refuse goods deemed excessive. For questions, contact chc-apo@usap.gov.

If corresponding with New Zealand residents, use this address to avoid U.S. postal costs and longer delivery times.

Station-Specific Information

McMurdo Station

Lodging	Rooms are similar to those in college dormitories with shared bathrooms, and participants are assigned at least one roommate. Roommate requests, including with spouses or partners, may not be honored for temporary or transient station residents. Temporary residents are defined as ASC employees staying fewer than 30 days and grantees staying fewer than 15 days. Those transiting McMurdo Station to South Pole Station or field camps will be assigned to transient lodging. Due to round-the-clock operations, roommates may arrive at any time of the day or night.
Housekeeping Chores	"House mouse" duties, which include cleaning common areas or maintaining waste collection areas, are shared by all personnel on a rotating basis.
Fax Machines	Contact the McMurdo Station IT&C Service Desk if you need to send or receive a fax. Alternatively, scan and share the document via email or other approved online sharing services.
Recreation	Facilities include a library, a craft room, clubs, a climbing wall, a gymnasium, weight and cardio gyms, an aerobics room, saunas, pool tables and dartboards, and a band room. Volunteers organize activities such as art shows, chili cook-offs, running races, yoga classes, dances, music performances, league play, lessons and lectures. Board games, costumes, musical instruments, cross-country skis and other items are available for rental.
Laundry	Washers, dryers and detergent for personal use are provided at no charge in the dormitories. Participants are responsible for washing bedding and clothing. Full loads are encouraged to minimize water consumption.
Religious Services	Limited services are typically provided by a military chaplain during the summer. In addition to conducting regular worship services and religious programs, the chaplain accommodates all religious practices and is available for counseling, both religious and secular. The chapel program provides opportunities for volunteers in ministry and service.

USAP Counselor	The USAP counselor is at McMurdo Station during the summer and typically visits South Pole Station at least once. They provide counseling services to participants at all locations and are available remotely during the winter.
Meals	Food service is cafeteria style. To minimize food costs and waste, take only what you will eat and eat all of what you take. A variety of food is offered every day. People with severe dietary restrictions or significant food allergies will have limited choices. Gluten-free, vegetarian and vegan menu items are often available but not guaranteed. In addition to the regular three meals, a midnight meal is served in the summer, first to night workers then to the general population. Snacks, pizza and leftovers are available at any time. Volunteers provide assistance with dish washing and, on special occasions, with food preparation.
Money	McMurdo Station is 100% cashless and checkless, so bring a debit and/or credit card with available funds.
Medical	The McMurdo Station Clinic provides healthcare to walk-ins and persons with appointments during posted hours, six days a week. Hours are posted at the entry and on the McMurdo Station intranet. For emergencies, staff can be reached 24/7 by calling 911. The facility is equipped to handle a wide range of minor illnesses and injuries and to stabilize critical patients for evacuation. Services include X-ray, ultrasound laboratory, pharmacy and nursing. A dentist is not available during the season, although one may be deployed near the end of the summer to help with winter-over PQ exams. During the winter, the physician has limited capability to treat and manage dental and rehabilitation needs. The clinic has a limited pharmacy and does not refill personal prescription medications nor provide OTC medications. All injuries should be evaluated at the clinic. The physician will fill out a MIRF, which gets submitted to the medical and emergency response manager who will forward to the corresponding HR representative who, if appropriate, will file the workers' compensation claim. Injuries are tracked anonymously to identify potential incident trends.

Station Store	The station store stocks a limited supply of toiletries, snacks, beverages and souvenirs. Rationing systems help ensure that all residents have access to items. It is prudent to bring a sufficient supply of toiletries for your entire deployment.
Vehicles	Vehicles are assigned to work centers and some grantee groups as designated in their RSP. If your assignment requires driving a vehicle, you will receive training in proper operation and preventive maintenance. Vehicles are government property and not authorized for personal use. A valid driver's license and site-specific training are required for vehicle operators.
Waste	All persons must keep the station presentable by properly sorting and disposing of all recyclables and waste. By entering a USAP station, you automatically consent to abiding by local procedures for waste management.

South Pole Station

Lodging	There are 153 rooms in the Elevated Station. Rooms are similar to college dormitories with community bathrooms. All are single rooms, but double-occupancy rooms can be created when requested.
Recreation	There is a large gymnasium, a weight and cardio room, a sauna, a small arts-and-crafts room stocked with basic supplies, a quiet reading room, a small greenhouse with public lounge, two movie lounges, a lounge with board games and a pool table, and a music room stocked with basic instruments.
Laundry	Washers, dryers and detergent are provided free of charge, but due to water conservation, participants are allowed only one load of laundry per week.
Meals	Food service is cafeteria style. To minimize food costs and waste, take only what you will eat and eat all of what you take. A variety of food is offered every day. People with severe dietary restrictions or significant food allergies will have limited choices. Volunteers provide assistance with dish washing and, on special occasions, with food preparation.

Station Store	The store stocks a limited supply of toiletries and beverages. Antarctic and South Pole Station souvenirs are also available for purchase, but supplies are limited. South Pole Station currently accepts cash only but will transition to a fully cashless, card-only system on January 1, 2027.
Medical	The South Pole Station Clinic can handle a wide range of minor illnesses and injuries and stabilize critical patients for evacuation. It has a limited pharmacy and does not provide OTC medications. Medical staff are on site year-round and provide healthcare on a walk-in basis.
Housekeeping Chores	House mouse responsibilities are shared by all personnel on a rotating basis. All residents participate in cleaning residential bathrooms, and most work centers have other weekly cleaning chores.
Money	Effective January 1, 2027, South Pole Station will transition to a cashless, card-only system, and cash reimbursements will no longer be available. Participants should plan accordingly and bring a debit or credit card for purchases.

Palmer Station

Lodging	Rooms are similar to college dormitories, with two-person shared rooms and community bathrooms. Bedding, pillows, comforters and towels are provided, as are laundry facilities and detergent. Water is plentiful and usage is generally not restricted, though conservation is encouraged. There is no janitorial staff. Everyone participates in station cleanup, radio watch and hosting visitors.
Recreation	Facilities include an exercise room with weights and cardio equipment and a club area with billiard and ping-pong tables. There are arts-and-crafts supplies and a limited selection of cross-country skis, snowshoes and camping equipment. The station also has a sauna and an outdoor hot tub. There is a library of movies and TV shows available for viewing on a large-screen projector in the lounge and some capability of viewing live TV via Starlink.

Meals	Food service is cafeteria style and offered every day except Sunday, when there are ample leftovers available. People with severe dietary restrictions or significant food allergies will have limited choices. Gluten-free, vegetarian and vegan menu items are often available but not guaranteed.
Station Store	A small store stocks toiletries, OTC medicines, souvenirs and beverages.
Medical	The station has a small but well-equipped clinic, with a physician available year-round.
Tourism	During the summer, tour ships and yachts may visit the station. Members of the community participate in preparing for these visits, giving tours of the station or working in the store.
Boating	Palmer Station maintains a fleet of small boats and two 30-foot, closed-cabin RHIBs. Some recreational use is allowed for viewing local wildlife. Safety training is required before participants are allowed to travel in or operate these boats.

USAP Support Vessels

Lodging and meals will vary by the vessel that USAP arranges for grantee projects. Be aware that travel on an vessel in the Southern Ocean often involves passing through intensely rough seas. If you are prone to motion sickness or have never sailed before, consult with your personal physician for the appropriate medication before you depart for Antarctica. See Chapter 5 for more information.

U.S. National Science Foundation
Sexual Assault and Harassment Prevention and Response Program Office



Resources for the U.S. Antarctic Program (USAP)

Have you experienced or witnessed sexual assault or sexual harassment in the USAP? **Help is available.**

The U.S. National Science Foundation Sexual Assault and Harassment Prevention and Response Program Office (NSF SAHPR) supports survivors and victims by providing resources, referrals, advocacy and support with navigating how and where to initiate a report or a complaint.

For assistance with how or where to report an incident or complaint, visit: https://new.nsf.gov/stopping-harassment/sahpr

Receive 24/7 immediate crisis intervention and emotional support via the **NSF Safer Science Helpline**:

Website and Online Chat: NSFSaferScienceHelpline.org

Phone: 833-673-1733

Text: 202-932-7569

Additional resources for the USAP community:

NSF SAHPR Program Office
Website: https://new.nsf.gov/stopping-harassment/sahpr
Email: saferscience@nsf.gov

NSF Office of Inspector General (NSF OIG)
OIG Hotline: https://oig.nsf.gov/hotline

USAP Special Deputy U.S. Marshal
Email: mcm-nsfstmgr@usap.gov

Advocacy services and mental health counseling:

USAP Victim Advocate
Provides confidential information about safety planning, reporting, possible accommodations, and other support resources.

Email: USAPadvocate@LDSScorp.com
Phone: 720-568-1083
USAP extension: x42709

USAP Licensed Clinical Counselor
Provides confidential mental health support and counseling services.

Email: USAP-counselor@usap.gov

For medical services, such as physical examinations, medical forensic exams, and preventative treatments, contact:

NSF McMurdo Station Medical Services
Local extension: x42551
Pager: 876

NSF South Pole Station Medical Services
Local extension: x61602
Radio call number: 242

NSF Palmer Station Medical Services
Local extension: x52778

Last update: May 2025

13 AEG/CC: Commander, 13th Air Expeditionary Group

ACA: Antarctic Conservation Act of 1978

AFS: Antarctic Field Safety

AMC: Air Mobility Command

AMD: Antarctic Metadata Directory

AMRDC: Antarctic Meteorological Research and Data Center

Antarctic-Environmental Protocol: Protocol on Environmental Protection to the Antarctic Treaty

AOD: Airport of departure

APHIS: Animal and Plant Health Inspection Service

APO: Air Post Office

APT: Antarctic Passenger Terminal

ASC: Antarctic Support Contract

ASMA: Antarctic Specially Managed Area

ASPA: Antarctic Specially Protected Area

ATCM: Antarctic Treaty Consultative Meeting

ATO: Antarctic Terminal Operations

ATS: Antarctic Treaty System

BL: Building

CBD: Cannabidiol

CDC: Clothing Distribution Center

CJTF-SFA: Commander, Joint Task Force-Support Forces Antarctica

COBRA: Consolidated Omnibus Budget Reconciliation Act of 1986

COMAIR: Commercial air

COMNAP: Council of Managers of National Antarctic Programs

COMSUR: Commercial surface

Crary Lab: Albert P. Crary Science and Engineering Center

CTBTO: Comprehensive Nuclear-Test-Ban Treaty Organization

DCJTF: Deputy commander, Joint Task Force

DNF: Do not freeze

DoD: U.S. Department of Defense

EBI: Elevated background investigation

EIA: Environmental impact

EOS: End of season

EPA: Environmental Protection Agency

ETA: Electronic Travel Authority

GMO: Genetically modified organism

GPS: Global positioning system

Hazmat: Hazardous material

HR: Human resources

HSMs: Historic Sites and Monuments

INZ: Immigration New Zealand

IPv6: Internet Protocol version 6

IRS: Internal Revenue Service

IT: Information technology

IT&C: Information Technology & Communications

JTF-SFA: Joint Task Force-Support Forces Antarctica

MB: Megabytes

MCC: Movement Control Center

MCV: Subclass 988 Marine Crew Visa

Medevac: Medical evacuation

MIRF: Medical Incident Report Form

MPI: Ministry for Primary Industries

MSC: Military Sealift Command

NAVCHAPGRU: Navy Cargo Handling and Port Group

NGO: Non-governmental organization

NIWC: Naval Information Warfare Center Atlantic

NSF: National Science Foundation

NSFREP: Senior U.S. representative in Antarctica

NYANG: New York Air National Guard

NZ: New Zealand

NZeTA: New Zealand Electronic Travel Authority

OPP: Office of Polar Programs

OSHA: Occupational Safety and Health Administration

SL: Outdoor Safety Lecture

OTC: Over the counter

PCB: Polychlorinated biphenyl

PI: Principal investigator

PIN: Personal identification number

POC: Point of contact

POLAR ICE: Participant On-Line Antarctic Resource Information Coordination Environment

PPE: Personal protective equipment

PQ: Physical qualification

RHIB: Rigid hull inflatable boat

RNZAF: Royal New Zealand Air Force

ROS: Required on site

RSP: Research Support Plan

SAHPR: Sexual Assault and Harassment Prevention and Response

SAR: Search and rescue

SCIREP: Science representative

SIP: Support Information Package

SPoT: South Pole Traverse

T&L: Transportation & Logistics

T-event: Technical event

UAV: Uncrewed aerial vehicle

USAP: U.S. Antarctic Program

USARP: U.S. Antarctic Research Program

USCG: U.S. Coast Guard

USCIB: U.S. Council for International Business

USGS: U.S. Geological Survey

UTMB: University of Texas Medical Branch

UV: Ultraviolet

VHF: Very high frequency

WinFly: Winter Flight