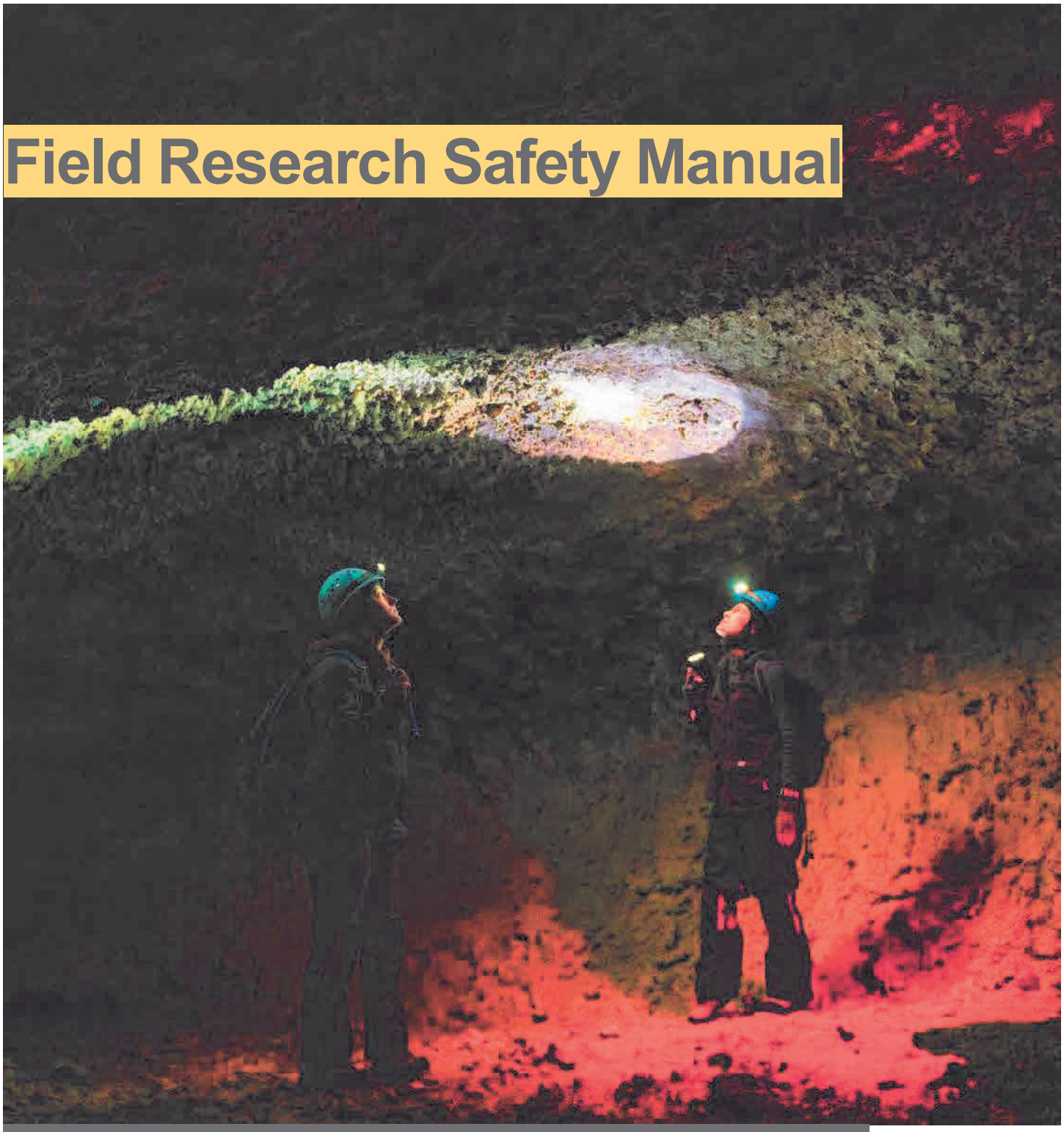
Arizona State University

Field Research Safety Manual



The Arizona State University Field Research Safety Manual provides requirements, policies, guidelines and resources for ASU personnel to conduct field research safely and successfully.

Environmental Health and Safety

April 2025

Cover photo: Former ASU researcher Marianne Moore surveys bat populations in a cave in northern Arizona, with help from a Forest Service park ranger. Photo by Jarod Opperman.

April 2025

Environmental Health and Safety

Chapter I — Preface and overview

The ASU Field Research Safety Manual provides requirements, policies, guidelines and resources for ASU personnel to conduct field research safely and successfully. This manual enables ASU personnel to minimize risks associated with conducting field research in local, regional, national or international locations.

Field sites may include:

- Coastlines.
- Construction areas.
- Excavations.
- Mines.
- Natural reserves.
- Public lands or parks.
- Waterways.
- Wilderness locations.

The intent is for the principal investigator and supervisory personnel to supplement this information with instruction and guidance regarding specific practices and procedures unique to the work being conducted in the field.

This manual will be reviewed and revised annually or when changes occur to university requirements, policies or procedures.

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Chapter II — Introduction

Field research is an important part of teaching and research at ASU. Since field research activities may take place off campus, locally, regionally or internationally, it is crucial that all ASU personnel plan and prepare for risks and health and safety concerns in the field. The integration of field safety planning into field research protocols ensures that research objectives and regulatory requirements are met to protect ASU employees from illness or injury according to the Occupational Safety and Health Administration regulations and the ASU Bloodborne Pathogens and Exposure Control Plan.

The ASU Bloodborne Pathogens and Exposure Control Plan is a written safety program to protect employees from illnesses and injuries related to human blood or potentially infectious human bodily fluids. ASU also maintains many other written compliance programs related to health and safety, including the:

- Anesthetic Gas Use Program.
- ASU Biosafety Manual.
- ASU Chemical Hygiene Plan.
- Emergency Response Guide.
- Hearing Conservation Program.
- Respiratory Protection Program.
- Welding, Burning and Cutting Program.

These programs outline the framework for identifying, mitigating and correcting workplace hazards. They ensure employee training and compliance, medical surveillance awareness and recordkeeping, including:

- ASU personnel and students participating in field research are responsible for following all ASU policies and procedures and safe work practices as outlined in the ASU Code of Conduct and the ASU Student Code of Conduct, including: Assemble research equipment and necessary supplies for field research before departure.
- Complete medical surveillance procedures before performing field research.
- Conduct a risk assessment to determine potential hazards in field research sites and effective mitigation strategies.
- Foster a safe and harassment-free environment.
- Obtain appropriate training for field activities.
- Procedures to follow in the event of an emergency.
- Report all injuries and incidents.
- Report Title IX violations.
- Report unsafe conditions, malfunctioning equipment and other safety concerns to principal investigators or supervisory personnel.
- Submit research protocols for approval to ASU Institutional committees as applicable.
- Use personal protective and safety equipment as determined by a risk assessment or as outlined in approved research protocols.

For specific information on fieldwork hazards and precautions, talk to your supervisor, contact Environmental Health and Safety at 480-965-1823 or contact ASU Employee Health at 602-496-1917.

Chapter III — ASU policies and procedures for field research

Field research differs from research performed in regular academic environments that have structured schedules, locations and available resources. There are unique challenges and opportunities while performing field research, including:

- Collaboration with non-ASU personnel.
- Decreased means of transportation to seek medical attention or leave the field sites.
- Limited outside communication.
- Limited resources.
- Working and living outside or in close quarters.

Based on these and other challenges and opportunities, it is crucial that all field site participants create, contribute, support and always promote a safe and positive learning and teaching environment when participating in field research.

A. ASU policies and procedures

Field research sites are an extension of the ASU campus. As such, **all ASU policies and procedures apply and must be followed in all ASU-affiliated field research sites**, including local, state, national or international locations. ASU personnel must adhere to all ASU university polices when participating in field research as outlined in the ASU Staff Personnel Manual. Some specific policies to review include:

- The Code of Conduct for Business Activities, outlined in the ASU Staff Personnel Manual, Section 813: "Employees will adhere to the business rules of the university and their department. Inappropriate business activities as described will result in disciplinary action up to and including termination of employment."[1] Inappropriate behaviors that may result in disciplinary action are outlined in the SPP manual.
- The SPP Manual Section 814 describes the university policies and procedures to provide a safe workplace by enforcing a zero-tolerance policy regarding acts of intimidation, threats of violence and acts of violence in the workplace.

B. Prohibition of discrimination, harassment and retaliation

"ASU is committed to providing an environment free of discrimination, harassment or retaliation for the entire university community, including all students, faculty members, staff employees and guests. ASU expressly prohibits discrimination, harassment and retaliation by employees, students, contractors or agents of the university based on any protected status: race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, genetic information

[1] Staff Personnel Manual, page 1.

and Title IX sexual harassment."[2]

The following university policies should be reviewed regularly:

- ACD 401 Prohibition Against Discrimination, Harassment and Retaliation.ACD 402 Romantic or Sexual Relationships Between Faculty Members and Students.
- SPP 815 Romantic or Sexual Relationships Between Staff or Volunteers and Students.

C. Mandatory reporting

"A supervisor, manager or administrator who is informed of or has a reasonable basis to believe that discrimination, harassment or retaliation involving any protected status is taking place shall promptly report it to the Office of University Rights and Responsibilities."[3]

"Unless a person is restricted by law from doing so, any employee who is informed of or has a reasonable basis to believe that sexual harassment, including Title IX sexual harassment, has occurred, shall immediately report all information regarding the occurrences to the Office of University Rights and Responsibilities, the Title IX Coordinator or the Dean of Students office."[4]

D. ASU supportive measures

Discrimination and harassment can have a profound impact on academic, social, personal and work life and negatively affect friends and families, other students, co-workers and members of the university community. ASU provides a variety of resources to support our community to combat this:

- Students can contact the Office of Advocacy and Assistance, ASU Counseling or an ASU Victim Advocate.
- Employees can contact their assigned HR representative, the Employee Assistance Office or an ASU Victim Advocate.

E. Prohibition of sexual harassment — A form of discrimination

ASU does not tolerate sexual harassment: "Sexual harassment is unwelcome behavior or conduct of a sexual nature, including unwelcome sexual advances or activity, which is sufficiently severe or pervasive as to create an intimidating, hostile or offensive environment for academic pursuits, employment or participation in university-sponsored programs or activities."[5]

"Sexual harassment, whether between individuals of the same or different sex, also

[2] ASU Academic Affairs Manual, page 1.
[3] ASU Academic Affairs Manual, page 2.
[4] ASU Academic Affairs Manual, page 2.
[5] ACD 401: Prohibition Against Discrimination, Harassment, and Retaliation, Page 5.

includes unwelcome behavior or conduct of a sexual nature, including unwelcome sexual activity that is made, either explicitly or implicitly, a condition of an individual's education, employment or participation in university-sponsored programs or activities or the submission to or rejection of such behavior or conduct is a factor in decisions affecting that individual's education, employment or participation in university-sponsored programs or activities."[6]

Sexual violence is a form of sexual harassment. "Sexual violence includes attempted or actual physical, sexual acts perpetrated against a person's will or where a person is incapable of giving consent due to the use of drugs or alcohol, due to an intellectual or other disability or due to age is also a form of sexual harassment. This can include rape, sexual assault, sexual battery, sexual coercion, domestic and dating violence and stalking."[7]

Title IX Sexual Harassment includes "unwelcome conduct occurring in the U.S. that a reasonable person would find so severe, pervasive and objectively offensive that it effectively denies a person equal access to ASU's education programs or activity." It also includes "an employee conditioning the provision of an aid, benefit or service of ASU on an individual's participation in unwelcome sexual conduct." Also, "any of the following specific acts of sexual harassment taking place within the U.S. and within an ASU education program or activity: sexual assault, dating violence, domestic violence and stalking."[8]

F. ASU Title IX Notice of Non-Discrimination

Title IX protects individuals from discrimination based on sex in any educational program or activity operated by recipients of federal financial assistance. As required by Title IX, ASU does not discriminate on the basis of sex in the education programs or activities that we operate, including admission and employment.

Inquiries concerning the application of Title IX may be referred to the Title IX Coordinator or to the U.S. Department of Education, Assistant Secretary or both. Email the Title IX Coordinator or call 480-965-0696 for more information on submitting a report. The office is located at 1120 S. Cady Mall, INTDSB 284.

[6] ACD 401: Prohibition Against Discrimination, Harassment, and Retaliation, Page 4-5
[7] ACD 401: Prohibition Against Discrimination, Harassment, and Retaliation, Page 5
[8] Interim Grievance Process for Formal Complaints fo Title IX Sexual Harassment, I. Purpose and Application.

Chapter IV — Planning

Environmental hazards and risks are inherent in field environments. Understanding the hazards and anticipating the risks of each field site will enable ASU personnel to reduce the possibility of negative consequences, including incidents or accidents. Planning and preparation before leaving is one of the most important phases of the field research experience. This section will outline the required planning and preparation steps for field research projects.

A. Field hazard assessment

A field hazard assessment must be completed for each individual field site. To conduct this assessment, research the environmental hazards that may be present in a field location, including:

- Biological hazards
- Chemical hazards
- Cultural or practice-related hazards
- Physical hazards
- Social hazards
- Unforeseen hazard

Complete a Field Research Risk Assessment Record located in **Appendix A to conduct a hazard assessment specific to the field site location**. This record will list all the identified risks associated with the field site and the measures taken by ASU personnel to reduce the risks.

There are many general, physical and environmental hazards in nearly every location worldwide. All field researchers, regardless of the work location, should read **Appendix B** to learn more about some general, physical and environmental hazards. Please also read **Appendix C: North America** if your research is anywhere in North America. Please also read **Appendix D: International** if your research will take you outside North America.

i. Animals and pests

There are many general safety hazards pertaining to animals and pests in nearly every location worldwide. All field researchers, regardless of the work location, should read through this section to learn more about some general guidelines to prevent unwanted animals and pests. Please read **Appendices E and F** if your research is in North America. Please also read **Appendix G: Animals and pests international** if your research will take you out of North America.

Many animals and pests may be encountered in the field. Follow these guidelines to prevent close encounters of the painful kind:

- Avoid contact with sick or dead animals.
- Be aware of the appearance and habitat of potential pests, such as those described in **Appendices E and F**.
- Carefully look for pests before placing your hands, feet or body in areas where pests live or hide, like woodpiles, crevices, etc.
- Carry a First aid kit with you on an excursion to treat bites or stings. Seek medical attention immediately if the pest is venomous or the bite does not appear to heal properly.
- Do not camp or sleep near potential animal nests or burrows.
- Keep the garbage in rodent-proof containers. Store it away from your campsite or work area. Food crumbs and debris may attract insects and animals.
- Minimize the time you use lights after dark, as they may attract pests and animals.
- Thoroughly shake all clothing and bedding before use.
- Use netting to keep pests away from food and people.
- Wear clothes made of tightly woven materials and tuck your pants into your boots.
- Wear insect repellent. **Mosquito-borne illnesses are responsible for more than a million deaths each year**.

ii. Proper rodent handling

Steps can be taken to reduce the risk of rodent-borne diseases. Most importantly, make the area unattractive to rodents. Cover or repair holes in a building to prevent unwanted rodents. Keep the area clean of trash and store food carefully to prevent attracting rodents if camping. Don't camp near rodent burrows. Some precautions will help reduce the risk of exposure to rodent-borne diseases when cleaning the area if rodent feces or dead rodents are discovered:

- **Dead rodent**: Use gloves. Soak the rodent, droppings and nest with a solution of one-part bleach to nine parts water. Soak them for at least five minutes before picking them up with a plastic bag. Place the bag in a second plastic bag.
- **Indoors**: **Do not stir up dust**. Ventilate the area by opening the doors and windows for at least 30 minutes to diffuse potentially infectious aerosolized material. Use cross-ventilation and leave the area during the airing-out period.
- **Rodent feces**: Do not sweep or vacuum rodent droppings. Spray the droppings with one-part bleach to nine parts water. Soak them for at least five minutes and then wipe up the droppings. Wet mop the area with the bleach solution if possible.

iii. Diseases

Diseases are caused by viruses, bacteria, fungi and parasites in nearly every location worldwide. This guide does not cover health risks in every location, but it provides information about some more common diseases. Always check with your health care provider, ASU Employee Health or Heath Services before traveling out of the country to learn about specific health risks for the region you will conduct your research.

All field researchers, regardless of the work location, should read through **Appendix H: Diseases general** to learn more about some general diseases that exist worldwide. Please also read **Appendix I: Diseases North America** if your research is in North America. Please read **Appendix J: Diseases international** if your research takes you out of North America.

B. Field safety plan

The Field Safety Plan, in **Appendix A,** must be completed for each ASU field project, including off-campus local, regional, national, international, or remote sites. The safety plan must include site-specific information, emergency procedures, and a list of emergency contacts. Required training, field support plans, and communication plans are also included in the field safety plan.

Developing a complete safety plan and ensuring that all project participants are familiar with the plan will better prepare the team to manage risks in the field and mitigate negative consequences. Established site procedures may be in place for field locations. However, the safety plan must be completed to outline the hazards and mitigation strategies specific to ASU research projects and personnel. The Field Safety Plan should include strategies for emergency response or plan violations.

The completed safety plan must be shared with all the members of the field research team and kept on file on campus. A single safety plan can cover multiple trips to the same location. The safety plan should be revised whenever a significant change to the location or scope of fieldwork occurs. EHS can assist in the completion or review of the safety plan. Please email EHS or call 480-965-1823 for assistance.

C. Trip registration

All ASU-sponsored trips must be registered using the My ASU TRIP system. All ASU-sponsored international trips involving students must also be registered in the Student International Travel Registration System per the Student International Travel Registration Policy.

My ASU TRIP is an end-to-end travel system for ASU students, faculty and staff to create trip requests, book travel and submit expense reports. The system is used for all trips with an overnight stay or airfare.

Are you traveling for ASU and want to learn the current ASU travel requirements? Join the ASU Travel Service Center team for training on **ASU Travel Policy** and **My ASU TRIP** for delegates or travelers and approvers for an information webinar. Sessions are held often. Find the latest dates and register through Workday.

Booking questions:
Anthony Travel
480-739-9145
1-844-682-5052
Email My ASU Trip

Policy, trip request and expense report questions:
ASU Travel Service Center
480-965-3111
Email My ASU Trip

Contact:
Mail code 5912
480-965-3111
Email My ASU Trip

General information:
Travel Service Center PO Box 875912
Tempe, AZ 85287-5912
My ASU TRIP Quick Reference Guide.
My ASU TRIP Travel Manual.

Student International Travel Registration System questions:
ASU Global Education Office
480-965-5965
Email ASU Global Education Office

My ASU Trip, getting started

Faculty and staff:

1. Update your My ASU TRIP Profile.
2. Activate e-receipts.
3. Add a delegate.
4. Apply for an ASU Travel Card to be used in conjunction with My ASU TRIP.
5. Book travel after your submitted trip request is approved.*

Students:

1. You may have an active profile if you are an active graduate assistant, resident assistant or teacher assistant. Your profile is active if you can log in to My ASU TRIP. If not, work with the department funding your trip and complete the manual profile form.

2. Update your My ASU TRIP Profile.
3. Activate e-receipts.
4. Add a delegate.
5. Book your travel after your submitted trip request is approved.

*All student ASU-sponsored international travel must be registered through the Student International Travel Registration System. Approval for these requests will not be granted in My ASU TRIP until this separate process is completed.

Trip requests

Trips require an approved request before traveling and travel booking. Expense reports are filed when the trip is complete and are created from the approved request.

The request allows for the following:

- Authorizes the travel card use for trip expenses.
- Documents needed travel approvals.
- Provides a trip expense and itinerary estimate.
- Provides data for traveler location for risk assessment.

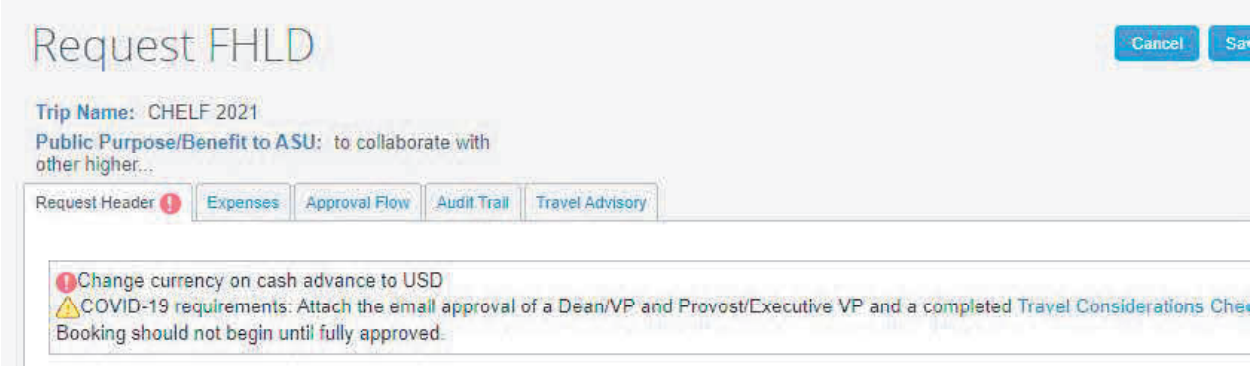
High-risk destinations: Additional departmental and risk management approvals are needed. Sufficient details should be included in the request for assessment. Allow time for these additional approvals.

Personal time: Do not include any expenses associated with personal time on your trip. Personal costs of the trip are not reimbursable.

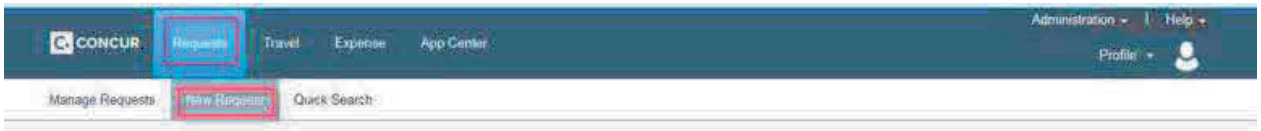
Zero-dollar trips: Trips with no cost to the university and no reimbursement to the traveler. A request is submitted to document your travel for insurance purposes and helps the university locate you in an emergency. The request is closed or inactivated when the trip is complete.

These exceptions may occur as you build your request:

	Red Exceptions need to be cleared before a request can be submitted. Read the exception for directions on how to clear it. If you need additional help, email My ASU TRIP.
	Yellow Exceptions are informational and need to be reviewed, complied with and will always display. They will not prevent a request submission.



To Begin a trip request: Log in to My ASU TRIP and click **request** > **new request.**



1. Create the trip request header.
2. Estimate expenses.
3. Allocate between funding sources, if needed.
4. Attach documents as needed.
5. Submit the request.

If needed, copy a request.

Book travel: You must have an approved trip request **before** booking travel. Airfare, car rentals, hotels and trains must be booked directly through My ASU TRIP:

1. **Airfare** can be purchased with your ASU travel card, the university-wide airfare card on file with Anthony Travel, a P-Card or with personal funds. Personal funds are reimbursed when the trip is complete and the expense report is filed. American Airlines and Southwest Airlines are preferred airlines and discounts are preloaded into My ASU TRIP.
2. Book directly with the hotel and not through My ASU TRIP to receive **conference hotel rates**. Email your booking before travel.
3. **Vehicle rental** discounts are preloaded into My ASU TRIP. Some rates may already include insurance. Please visit the Vehicle Insurance page under the resources tab to view current rental contracts.
   a. A traveler must be an authorized driver before driving any vehicle.

For assistance with bookings and to use airline credits, email Anthony Travel or call 480-739-9145 or 1-844-682-5052.

My ASU TRIP step-by-step instructions:

1. Book airfare
2. Reserve hotels
3. Reserve a rental vehicle

Expense reports are:

- Created from approved trip requests.
- Completed within 30 days of a trip end date.
- Documented actual trip expenses and itineraries.
- Documents of public record and scrutiny.
- Generate traveler reimbursement.

These exceptions may occur as you build your request:

	Red Exceptions need to be cleared before a request can be submitted. Read the exception for directions on how to clear. If you need additional help, email My ASU TRIP.
	Yellow Exceptions are informational and need to be reviewed, complied with and will always display. They will not prevent a request submission.

Read the exception for directions to clear them. Contact your department or My ASU TRIP for additional assistance.

- Complete an Expense Report.
- Complete a Non-Travel Expense Report: Process travel card charges unrelated to ASU travel.
- Complete a Modification Expense Report: When a previously approved expense report needs adjustment.

Travel card

A chip-and-PIN-enabled VISA card is used for official university travel expenses billed and paid for by ASU:

- Includes travel and emergency assistance and an auto rental collision damage waiver program.
- Incurs no foreign currency transaction fees.
- Integrated into My ASU TRIP.
- Issued to an individual.
- Transactions are expensed following the expense report completion.

ASU travel cards are issued and are subject to the traveler's continued compliance with university policies and standards:

- ASU travel card standards of use
- ASU's commitment to ethics
- FIN 501: ASU Travel Policy

Procedures for trips with no overnight stay or airfare

Accounts Payable processes trips without an overnight stay, airfare and ASU travel card transactions on the mileage and parking reimbursement form.

Travel guidance

Find the latest travel guidance on the Travel guidance webpage.

International travel

Follow these guidelines for international travel:

1. **International travel for students:** ASU students participating in foreign research field sites must register their travel in the Student International Travel Registration System.

2. **International travel for employees:**

ASU employees traveling on authorized university business outside the U.S. are provided insurance coverage for liability and workers' compensation through the Arizona Department of Administration, Risk Management Section, per Arizona state law. University property used in authorized international travel is covered under the university's property insurance coverage program.

In addition, ASU employees are provided with Business Travel Accident coverage, including medical coverage. All university employees are encouraged to print an international travel insurance card and carry it while traveling internationally. Employees should call the number on the card when emergency assistance is needed.

See managing emergencies for more information on incident reporting while abroad. Review the ASU travel webpage for information on traveling for ASU. See section D, subsection ix below for information on licenses for international travel, including to federally sanctioned countries.

i. Authorized driver

All ASU employees, student workers and registered volunteers who drive ASU-owned, leased or rented vehicles for official university business must complete the Authorized Driver Program. Official University Business is defined in Arizona Revised Statutes §38-538.02 and Arizona Administrative Code R2-10- 107.

The authorized driver process includes:

- A successful 39-month motor vehicle annual records check.
- Completed authorized driver training.
- Consent to the program through My ASU.

Those permitted to drive an ASU owned, leased or rented vehicle:

- ASU employees
- Registered volunteers
- Student workers

Drivers must be 18 years old with a valid U.S. license to operate an ASU-owned vehicle. Drivers are subject to the age requirement set forth by the rental company when renting a vehicle for ASU business.

Those not permitted to drive ASU-owned, leased or rented vehicles:

- Contractors or vendors
- Student organizations
- Students who are not employees or registered volunteers
- Temporary employees
- Third parties

Please visit Driving for ASU for instructions on how to complete an MVR, consent to the program and complete the training. The Authorized Driver Program is run by ASU Human Resources.

D. Risk and Insurance Services

"Office of Risk Management is your partner to identify, analyze and develop strategies to mitigate various risks in the ASU community. Our mission is to promote the benefits of sound risk management principles and best practices through cross-functional partnerships and collaboration.

Our primary function is risk consulting and analysis, including loss prevention and contractual risk reduction. Our team also supports certificates of insurance, contractual risk transfer, drones, field trips, high-risk travel, insurance claims, minors on campus, special events and insurance coverage for volunteers."[9]

Risk Management Contact:

University Services Building
1551 S Rural Road
Tempe AZ 85281
Phone: 480-965-7700
Email Insurance Services Email ORM

i. Insurance

Please see the following guidelines for insurance:

[9] Office of Risk Management.

1. Vehicle insurance

University-owned, rented and leased vehicles, including carts used for official university business, are covered under the university's property and liability insurance coverage provided by the state of Arizona.

A vehicle insurance loss claim can be processed for insurance recovery when an ASU-owned vehicle is damaged due to an accident, vandalism, theft, windshield or glass breakage or similar loss. Submit a loss claim for a vehicle loss or windshield damage.

Vehicle damage must be reported as follows:

- One day from the discovery of loss for damage expected to exceed $5,000.
- Ten days from the discovery of loss for damage expected to be under $5,000 or below.

The State of Arizona will deny any claim reaching 90 days with no action or any claim submitted after 90 days.

2. International vehicle insurance

ASU-owned and leased vehicles used for international travel are provided the same coverage as domestic travel. However, due to variations in the local laws, it may be required to purchase country-specific insurance.

The traveler must confirm local requirements and purchase appropriate coverages as local law requires and ensure adequate coverage is in place. The traveler must purchase auto liability and property damage insurance coverage for any leased or rented vehicle used in international travel.

3. Mexican insurance

Mexican authorities do not recognize insurance policies from the United States. Risk Management maintains a Mexican automobile, aircraft and general liability insurance policy covering university employees traveling in Mexico on authorized university business. Only university-owned vehicles are covered for automobile liability. Proof of insurance must be maintained in the vehicle at all times.

Proof of insurance can be obtained before any trip to Mexico. Please submit a request to receive a Mexico ID insurance card.

4. Claims

All claims must be submitted electronically. ASU is self-insured through

the State of Arizona. ASU's insurance includes auto coverage for ASU-owned or leased vehicles, carts, vehicles rented under ASU's Enterprise contract and vehicles under the state's Hertz contract. ASU's insurance also includes property coverage for real property, like buildings and equipment and business personal property, like contents and supplies.

ASU's insurance **does not** cover employees' or students' personal vehicles or property. Submit a claim for ASU property or auto damage.

The State of Arizona will deny any claim reaching 90 days with no action or any claim submitted after 90.

5. Certificate of insurance

Departments utilizing external entities that request a certificate of insurance from the university before the use of their facilities or properties must provide ASU Insurance Services with:

- A copy of the contract or agreement document.
- Complete and submit the Request for a certificate of insurance no later than 15 working days before the effective date of coverage.

What happens next?

- Arizona Department of Administration, State Risk Management Section will not issue a certificate of insurance for documents that contain inappropriate indemnity or hold harmless language, nor a certificate of insurance naming any party as additional insured.
- ASU Risk Management will request a certificate of insurance from ADOA Risk Management.
- ASU Risk Management will review the documents for appropriate insurance language and approve them.
- Contracts and agreements may be forwarded to the ASU Office of General Counsel for review.
- Once the language has been approved, the document must be signed by an authorized university official with contract signature authority per the Purchasing and Business Services Policy and Procedure Manual, Section 202.
- Upon approval from ADOA Risk Management, ASU Risk Management will then forward a copy of the certificate of insurance to the requesting department.

ii. International travel

University employees who travel on authorized university business outside of the U.S. are provided insurance coverage for liability and workers' compensation through the Arizona Department of Administration, Risk Management Section per

the state of Arizona.

University property used in authorized international travel is covered under the university's property insurance coverage program. All university employees are encouraged to print an international travel card and carry it while traveling internationally.

Please review the prep for travel and insurance for more information.

iii. Emergency travel assistance

Always carry an international travel insurance card.

International emergency travel assistance is available to university employees during business travel.

Coverages include but are not limited to:

- Accidental death benefits
- Accidental dismemberment and plegia benefits
- Medical and non-medical repatriation
- Security evacuation assistance
- Therapeutic counseling benefits
- Travel medical insurance

Coverage and services apply only to university employees while traveling on behalf of the university. Travelers should contact their health care insurer for details on their medical coverage should the traveler become ill or injured when unrelated to university business. Policy terms and conditions are subject to change as policies renew.

iv. Non-employee travel insurance

The university provides limited accidental medical expense coverage above any other collectible medical insurance for non-employees authorized to travel on university business. Coverage applies to students participating in approved field trips* and university volunteers traveling on authorized university business. Accidental death and dismemberment benefits are also included.

Coverage limits include:

- Aggregate limit of liability — $375,000 per accident
- Death and dismemberment — principal sum $25,000
- Medical expense limit — $25,000

University employees traveling on authorized university business are provided coverage under the Arizona Department of Administration, Risk Management Section's Workers' Compensation Program. Employee workers’ compensation

coverage and claims issues can be directed to Human Resources Benefits Office at ASK HR.

*Students registered in the Student International Travel Registration System and university employees traveling with them are also covered by a separate international insurance policy coordinated by the Global Education Office.

v. Emergency management

Follow these steps for emergency management:

1. Establishing an emergency plan

All travel, regardless of destination, brings a certain level of inherent risk. Even if you are an experienced traveler, it is important to have an emergency plan that considers the following:

- ASU and local emergency contacts.
- Destination information, e.g., lodging information, transportation plan, medical facilities, rules and regulations, currency, customs and cultural norms.
- Familiarity with ASU travel resources available in the event of an incident, such as the ASU International Insurance Travel Card.
- Potential risks or threats associated with the destination and action plans that respond to those risks

You will be asked to share copies of your emergency plan with your supervisor and Risk Management before traveling to high-threat-level locations.

2. Responding to an incident

Follow your emergency plan and contact the appropriate support services if you are involved in an incident overseas:

- Call the equivalent of 911 for the country you are in if you need local assistance like police, ambulance or the fire department.
  - All travelers may also use the AlertTraveler app to call for local assistance.
- Contact the nearest U.S. embassy or consulate or call 202-501-4444 if you are in a crisis or have a lost or stolen passport.
- Please call the 24/7 phone number on your ASU International Travel Insurance Card if ASU employees require emergency medical, evacuation or other travel assistance.
- To notify ASU, contact the ASU Police Department at 480-965-3456 and your supervisor and request their assistance as necessary.

Visit the U.S. Department of State's page on emergencies abroad for additional information.

3. **Reporting an incident**

Once the emergency has been addressed, report the incident to ASU. Start with your immediate supervisor. Keep a written log detailing the dates, times, places and descriptions to document the incident.

vi. Employees

All accidents and injuries occurring at work or in the course of employment must be reported to the employee's supervisor, even if no medical attention is required. Incident reports may be submitted by the employee or the supervisor. Please email Risk Management or review the Risk Management website for claims reporting information if the incident involves an injury to a non-ASU party or damage to or theft of ASU property.

vii. Workers' compensation

Seek appropriate medical attention in the event of a work-related illness or injury. Contact ASU Human Resources Benefits Office at ASK HR, the State of Arizona Workers' Compensation Early Claims Reporting Service at 800-837-8583, and your immediate supervisor within 48 hours of the illness or injury to file a workers' compensation claim.

Arizona's workers' compensation statute of limitations requires an injured worker to report their work-related injury within one year from the date of injury. The worker may forfeit their right to receive compensation if they don't file a claim before the 1-year deadline.

Employee workers' compensation coverage and claims issues can be directed to the Human Resources Benefits Office. Supervisors should complete the Workers' Compensation packet.

viii. Licenses for international travel, including to federally sanctioned countries

A list of federally sanctioned countries is available on the U.S. Treasury website.

Foreign workers' compensation and liability coverage may not be provided for employees traveling to federally sanctioned countries unless the ADOA Risk Management Section has been notified at least two months in advance.

Employees traveling internationally, including to federally sanctioned countries, on ASU business must determine if a license is necessary from the U.S.

Treasury Department, U.S. Department of State or U.S. Department of Commerce before travel. Submit the license along with the travel dates, the specific purpose of the trip and a copy of the travel itinerary to ASU Insurance Services if a license is needed.

Please email Institutional Compliance and Regulatory Affairs for questions about licenses. The travel dates, the specific purpose of the trip and a copy of the itinerary must be submitted irrespective of whether a license is required to travel internationally, including to a specific federally sanctioned country.

ASU Insurance Services will submit all documentation to the ADOA Risk Management Section for their determination if additional insurance is necessary. The traveler's department is responsible for the cost associated with purchasing additional insurance.

ix. Unmanned aircraft systems

The Unmanned Aircraft Systems policy applies to all ASU students, faculty, staff and guests who plan to operate a UAS or drone.

This includes, but is not limited to:

- An ASU unit contracting or hiring a third party to provide UAS services.
- Any person who is operating a UAS on or above university property.
- ASU students, faculty or staff who will operate a UAS in any location, whether on ASU property or not, as part of their university employment or ASU activities or special events.
- The purchasing of a UAS with funding through ASU, including university accounts, grants or ASU foundation accounts.

1. Access request

Anyone wishing to operate a UAS, drone or model aircraft must obtain approval from Risk and Emergency Management before operation.

To request permission, individuals should:

1. Complete an Unmanned Aircraft Systems Request Form.
    - Requestors must include a copy of their Federal Aviation Administration UAS certificate of registration, flight plan diagram and remote pilot's license.
2. Non-ASU affiliates must sign a Release, Indemnity and Assumption of Risk Agreement.
    - Along with the items outlined in step one, non-ASU affiliates must also include a completed agreement and a copy of the certificate of insurance within the request.

3. All documents and forms are reviewed by Risk and Emergency Management.
    - The requestor will be notified and issued a permit if approved.
    - A representative from Risk and Emergency Management will connect with the requestor to discuss their initial request if denied.

All documentation and forms must be submitted 15 days before the requested flight date.

Contact Risk and Emergency Management with questions.

2. Insurance coverage

The State of Arizona only provides aviation liability coverage for unmanned aircraft systems owned by ASU. No coverage will be afforded to first-party claims or physical damage to an unmanned aircraft system owned by ASU employees, students, staff or faculty members. Each department is responsible for repairs, replacements, maintenance and any mechanical upkeep required by the Federal Aviation Administration guidelines.

Third parties and UAS vendors must purchase their aviation liability coverage before conducting a flight on campus or any event associated with ASU.

3. Purchasing UAS

Any ASU employee, student or unit using university funds or funds disbursed through a university account or grant funds to purchase a UAS, the parts to assemble a UAS or UAS services must provide ASU Risk Management Services with the Certificate of Aircraft Registration and Operators Certificates for any ASU operators.

4. Restrictions

UAS operators are prohibited from monitoring, photographing or recording areas with a reasonable expectation of privacy.

These areas include, but are not limited to:

- Changing or dressing rooms
- Employee offices
- Health treatment rooms
- Laboratories
- Locker rooms
- Private residential properties
- Restrooms
- Student housing facilities

Written approval is required to operate a UAS in such areas and must be included within the request form.

Please visit the ASU Enterprise Brand and Marketing Guide for proper photography and videography guidelines when filming with a UAS on or off university property.

5. Reporting issues

Please contact the ASU Police Department on the non-emergency line at 480-965-3456 to report the observation if you witness a drone operating dangerously or potentially without a proper permit.

6. Resources

ASU policy: EHS 707: Unmanned Aircraft Systems or Drones

Visit the following webpages to obtain additional information about UAS guidelines and operating procedures:

- **Airports:**
  - Phoenix-Mesa Gateway Airport: Drone operators
  - Phoenix Sky Harbor International Airport: Fly Your Drone Responsibly
- **Federal Aviation Administration:**
  - Unmanned Aircraft Systems
  - Fact sheet

E. Registration of research.

Field research projects may need to be registered with the ASU Institutional Committees as follows:

i. Field research involving biological materials

Institutional Biosafety Committee

The Institutional Biosafety Committee is responsible for the review and oversight of research or teaching conducted under the auspices of ASU that utilizes recombinant or synthetic nucleic acid molecules, biohazards or infectious agents, select agents and toxins or dual-use research of concern.

The IBC has established and implemented policies and procedures to provide for the safe and ethical conduct of research and teaching activities involving all biohazards and to facilitate compliance with the National Institutes of Health's Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid

Molecules and other university, sponsor, federal, state and local laws and regulations.

Field research that requires IBC review includes, but is not limited to, the possession, storage or use of the following materials:

- Animal or plant etiologic agents and wild animals with reasonable expectations to harbor infectious agents.
- Biohazards.
- Biological toxins, bioactive derivatives or subunits of toxins.
- Human etiologic agents.
- Human or nonhuman primate cell lines, tissues, blood or blood products, feces, saliva or bodily fluids.
- Recombinant or synthetic nucleic acid molecules.
- Select agents or toxins.
- Transgenic animals or plants.
- Work with archaeological samples, e.g., bones, clothing fragments and pottery, that may lead to the production of aerosols.

ASU's Office of Research Integrity and Assurance's Biosafety page provides guidance regarding research registration with the IBC. Email the ASU IBC for more information.

ii. Field research involving live vertebrate animals

ASU animal care and use program

ASU is committed to the ethical and humane treatment of animals in advancing research that benefits humans, animals and the environment.

ASU's Animal Care and Use Program provides animal housing, husbandry and veterinary care, trains researchers on safe and ethical procedures and ensures compliance with federal, state and university regulations.

The program has several components:

- **Animal Users Advisory Committee** — Provides a conduit for communication between researchers and the animal care and use program, as well as advises the program to ensure that it effectively addresses the needs of the researchers.
- **Department of Animal Care and Technologies** — Provides exemplary care to animals housed on campus and technical support to all investigators and instructors who use animals to advance education and knowledge.
- **Institutional Animal Care and Use Committee** — Oversees a compliant and humane animal care and use program that supports the research and

teaching programs of our researchers, instructors and students.

ASU's Office of Research Integrity and Assurance guides field research involving live vertebrate animals and cephalopods**.** Email the IACUC for more information and review the guidance for determining field study exemptions.

Transportation of live animals

The transportation of live animals for local field research projects requires specific procedures. The national or international transportation of live animals will require additional procedures and regulatory permits.

Local transportation: If transporting live animals locally for field research projects, email the IACUC for guidance:

- ASU IACUC Standard Institutional Guidelines: Off-Campus Transport of Animals by Laboratory Personnel.
- Assurance to Abide by the Requirements for Transporting Live Animals form can be downloaded here.

National or international transportation:

Please email ASU biosafety to assist with permits and transport procedures if field research projects require the transportation of live animals in the continental USA or internationally.

iii. Field research involving humans as subjects

All ASU and research-related projects involving humans as subjects **must** be reviewed and approved by ASU's Institutional Review Board before implementing studies, including recruitment and screening activities. The role of the IRB is to review all proposed research involving human subjects to ensure that subjects are treated ethically and that their rights and welfare are adequately protected.

All institutions engaged in human subjects research that is not exempt from 45 CFR 46 and is conducted or supported by any HHS agency **must** be covered by an Office for Human Research Protections, or OHRP, approved assurance of compliance. The Federalwide Assurance is the only type of assurance accepted and approved by OHRP. The Assurance is a formal declaration to HHS that it will comply with the requirements set forth in 45 CFR 46, and the terms of Assurance.

1. What activities require IRB review?

IRB review is **required** if the study involves **human subjects** and meets the definition of **research**.

A **human subject** is defined as "a living individual about whom an

investigator conducting research obtains data through intervention or interaction with the individual or identifiable private information."[10] This definition can include online surveys, collection of individual human subject data from online sources, analysis of coursework, interviews, etc.

Research is defined as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge."[11]

E-mail the ASU IRB with a brief description of the study and specific direction will be provided if you are unsure whether your project meets this definition and **requires** review.

ASU's Office of Research Integrity and Assurance provides guidance for field research involving human subjects. Contact ASU's IRB for more information.

2. Field research projects not covered by Institutional Committees

Field research projects involving arthropods, invertebrate animals, some plants and environmental samples, archeological samples where no aerosols are produced, chemicals or other materials not covered by institutional committees still need to be registered with ASU Environmental Health and Safety Department. Contact EHS for assistance.

F. Occupational Health

Field research projects may include specific occupational health requirements, including medical clearance or surveillance, respirator use, vaccinations or prophylaxis. Requirements vary depending on geographical location, potential risks, personal protective equipment used and other factors. Field projects subject to institutional committee approval will specify occupational health requirements.

Principal investigators who are employees may contact ASU Employee Health and students may contact ASU Health Services or ASU Employee Health for occupational health recommendations for field projects that do not fall under the purview of the institutional committees.

In addition, all personnel participating in field research projects are encouraged to review CDC or state department guidance for recommended vaccinations and prophylaxis according to their destination.

It is highly recommended that individuals who are pregnant, immune-compromised, have severe allergies or other chronic medical conditions consult with ASU Employee Health or their personal medical provider before participating in field

[10] Office of Research integrity.
[11] Office of Research integrity.

research projects.

i. ASU Employee Health

ASU Employee Health offers job-related physical examinations, medical surveillance and health screening related to biological, chemical, noise, laser, radiological and other workplace exposures.

This includes pre-placement or post-job offer physical examinations. Employee Health also provides periodic examinations and maintenance of confidential employee health records, including individual screening results.

1. Immunizations

Immunizations prevent illness in the workplace. Employee Health providers will assess your risk for exposure and offer the appropriate immunizations based on the information provided in the occupational exposure questionnaire. Routine vaccinations, research-specific and travel immunizations are available at Employee Health.

2. Laboratory and testing services

The following are laboratory and testing services:

- Tuberculosis screening
- Other specialized testing

3. Medical monitoring and surveillance

The following medical monitoring and surveillance are available:

- Physicals
  - Annual physicals
  - Hazardous Materials physicals and monitoring
  - Pre-employment physicals
- Post-exposure treatment and coordination of care
- Research-related health consultations
- Worker's compensation follow-up
- Workplace injury treatment and follow-up

4. Required regulatory testing

The following are regulatory testing:

- Hazardous materials required monitoring
- Hearing conservation program
- Respiratory protection program
  - Fit testing: N95, full-face and half-face respirators

- Respirator medical clearance

5. Other services

These services are also available:

- Develop and implement health promotion programs.
- Manage and treat work-related illnesses and injuries, emphasizing early recognition and intervention, make recommendations about work restrictions and follow up with and monitor employees as they return to work.
- International Travel consultation:
  - ASU Employee Health offers a variety of travel vaccines, including typhoid, polio, flu and MMR. You may need additional travel-related vaccines depending on your travel destinations. Every effort is made to ensure that our employees traveling abroad have the resources and information they need for a successful experience.
  - Make an appointment with your ASU Employee Health provider, ideally at least four to six weeks before you leave.

    The provider will review your medical history to ensure you get up to date on the correct vaccinations, medicines and information to travel safely.

    If your program lasts several months, you will want to ensure you have gotten all your routine health check-ups, including dental care, because the quality of dental and medical care may be different in host countries or are more expensive than in the U.S.

    Make sure you have enough medicine for the length of your trip if you take it regularly.

6. Respiratory protection

Some field research projects may require respirators, including, N95s, half-face or full-face respirators. The use of respirators requires medical clearance and fit testing. Contact ASU Employee Health for assistance.

7. Animal contact

ASU Employee Health administers occupational health services for personnel with direct or frequent contact with vertebrate animals, allergens, unfixed tissue or bodily fluids. Services are under the guidance of the ASU Institutional Animal Care and Use Committee.

Schedule a medical consultation at **least six to eight weeks** before the initiation of field research projects for occupational health needs.

8. Contact information

ASU employees may contact their provider through My Health Portal. Contact ASU Employee Health at 602-496-1917, Monday–Friday from 7 a.m. to 4 p.m.

ASU students should contact Student Health Services. Contact Student Health Services at 480-965-3349, Monday–Friday from 8 a.m. to 5 p.m.

Employee Health Office location:
1492 S Mill Ave., Suite 105
Tempe AZ 85281
Phone: 602-496-1917
Fax: 480-965-2058

After hours:

- **For emergencies, call 911.**
- If an injury is **not life-threatening and does not require urgent medical care**, please contact CorVel at 800-685-2877.
    - CorVel is a nurse triage service provided by the Arizona Department of Administration and provides telephone consultations for minor injuries.

ii. ASU Health Services

ASU students participating in field research projects should contact ASU Health Services for occupational health needs. ASU Health Services is dedicated to the well-being and educational success of each student by providing high-quality health care that is accessible, affordable and compassionate.

1. International travel

Make an appointment with your ASU Health Services provider, ideally at least four to six weeks before you leave. The provider will review your medical history to ensure you get up to date on the correct vaccinations, medicines and information to travel safely.

You will want to ensure that you've gotten all your routine health check-ups, including dental care, if your study-abroad program lasts several months, because the quality of dental and medical care may be different in host countries or are more expensive than in the U.S. Make sure you have enough medication for the length of your trip if you take it regularly.

ASU Health Services offers a variety of travel vaccines, including typhoid, polio, flu and MMR. You may need additional travel-related vaccines depending on your travel destinations. Every effort is made to ensure that our

students traveling abroad have the resources and information they need for a successful study abroad experience.

2. **Travel vaccines**

ASU Health Services provides vaccination and travel health information for students preparing to travel outside the U.S. Students scheduled to travel will meet with a travel medical provider to determine the appropriate vaccinations required for their trip. The student will be provided with up-to-date information about food and water safety, insect protection and other travel and safety-related information.

A travel appointment should be scheduled far in advance since some vaccines are given as a series over six months.

Contact Health Services to schedule a travel appointment. Vaccines available at ASU health services include:

- Hepatitis A
- Hepatitis B
- Influenza
- Japanese Encephalitis
- Meningococcal
- MMR — measles, mumps, rubella
- Pneumonia
- Rabies
- Tetanus
- Typhoid
- Varicella — chickenpox
- *Yellow Fever

* Yellow Fever vaccinations may not be available due to nationwide shortage. Please inquire with our nurse travel clinic on availability and options if needed.

Download the ASU Health Services International Travel Questionnaire.

3. **ASU Health Services contact information**

Medical providers are available to Arizona-residing students through in-person and Telehealth options:

1. In-person options are Monday–Friday, 8 a.m. to 5 p.m. and telehealth is available Monday–Friday, 8 a.m. to 5 p.m.
2. How to reach ASU Health Services
    - After hours: Call 480-965-3349.
    - Call 480-965-3349 during office hours.
    - Schedule an appointment or message your provider through My

Health Portal.

Call 911 during emergencies.

More than 20 physicians and nurse practitioners are board-certified in emergency medicine, family medicine, internal medicine, neurology, orthopedics, rheumatology and sports medicine. In addition, ASU Counseling Services offers confidential, personal counseling and crisis services for students experiencing emotional concerns, problems adjusting and other factors that affect their ability to achieve their academic and personal goals.

G. U.S. federal agency permits and licenses

Samples, including biological materials, e.g., human or animal specimens, viruses, bacteria, fungi, plants, animals, arthropods, environmental samples or other materials, may be collected during field research studies and may need to be transported or shipped back to ASU campuses. The import, interstate movement and export of some materials is strictly regulated by various U.S. federal agencies and may require permits or licenses.

Failure to comply with regulations and secure the required permits or licenses when transporting regulated materials may result in shipment delays or destruction at U.S. ports of entry, shipment refusal by carriers and be subject to fines and criminal penalties.

This section provides an overview of permits and licenses that may be required for field samples.

- **Principal Investigators must be the primary permit holders**. Other research personnel may be listed in the permits as users or secondary permit holders.

  Permit holders assume all legal responsibility for the materials listed in the permits, material handling, transportation and security requirements. They must meet the conditions specified in individual permits at all times.
- Processing and approval times for permits and licenses vary. Please submit applications **at least 30 days** before permits or licenses are needed to allow sufficient time for processing and approvals.
- Please email the ASU Biosafety team if your field research projects require permits or licenses for assistance.

i. CDC Import Permit Program

The CDC Import Permit Program regulates the importation of infectious biological materials that could cause disease in humans to prevent their introduction and spread into the U.S. The program ensures that the importation of these agents is monitored and facilities receiving permits have appropriate biosafety measures in

place to work with the imported agents.

Materials requiring import permits include:

- Infectious biological agents capable of causing illness in humans.
- Materials known or reasonably expected to contain an infectious biological agent.
- Vectors of human disease, like insects or bats.

These items may be imported into the U.S. for a variety of reasons, including:

- Outbreak surveillance.
- Research and development of diagnostics, vaccines and therapeutics.
- To benefit from the unique laboratory testing available in the U.S.
- To support research in better understanding the potential threats posed by these agents.

Regulatory authority for the program is given to the Secretary of Health and Human Services through the Public Health Service Act, which allows for the development and enforcement of regulations to prevent the introduction, transmission or spread of communicable disease from foreign countries into and throughout the U.S. or its possessions. The regulations, 42 CFR § 71.54, require that anyone wishing to import infectious biological agents, infectious substances or vectors must first obtain a permit issued by the CDC.

Learn more about the CDC Import Permit Program.

Visit CDC Import Permit Applications for instructions on applying for an import permit. Note: An inspection may be conducted before a permit is issued to ensure the applicant's facility has appropriate measures to minimize the accidental release of biological agents capable of causing human disease.

- There is no fee to obtain a CDC Import Permit.

Contact information:

Centers for Disease Control and Prevention Import Permit Program
1600 Clifton Road NE, Mailstop H21-7 Atlanta GA 30329
Telephone: 404-718-2077
Fax: 404-471-8333
Email: Import Permit Program

ii. USDA Animal and Plant Health Inspection Service Permits

USDA's APHIS permits are required to import, transit and release regulated animals, animal products, veterinary biologics, plants, plant products, pests, organisms, soil and genetically engineered organisms.

1. **Animal and animal products**

This includes live animals, semen, embryos and materials derived from animals or exposed to animal-source materials such as animal tissues, blood, cells or cell lines of livestock or poultry origin, RNA or DNA extracts, hormones, enzymes, and microorganisms, including bacteria, viruses, protozoa and fungi.

In addition, it also includes animal materials, including dairy products not butter and cheese and meat products, like meat pies and prepared foods from countries with livestock diseases exotic to the U.S.

Please do not apply for an import permit if you are importing a pet dog or cat. Contact the CDC for requirements:

- Apply for an Import or Transit Permit — check application status
- Export Guidelines and Regulations
- Import, Organisms and Vectors Guidelines and Regulations
- Pet Travel Information

2. **Live dogs — resale or research**

Please visit How to Bring Dogs into the U.S. for Commercial Sale or Adoption for important information about live dog imports if you are importing live dogs for resale, whether through commercial sale or adoption.

- There is a fee to obtain APHIS animal health permits.

3. **Biotechnology permits**

Includes genetically engineered organisms considered to be regulated articles:

- A permit application should be submitted to APHIS:
  - At least 60 days before the first proposed importation or interstate movement.
  - At least 120 days in advance of the proposed release into the environment.
- Apply for a BRS Notification or Permit.
- Learn about BRS Permitting and Notification Process.
- There is no fee to obtain a BRS Permit.

Visit USDA BRS Permits User Guide for additional information.

4. **Plants, organisms and soil**

For Plant, organisms and soil permits:

- Plant Health Permit Website
- Obtain a Plant Export Certification

There is no fee to obtain a Plant Health Permit.

5. **Veterinary biologics**

This includes vaccines, bacterins, antisera, diagnostic kits and other products of biological origin:

- Apply for a Veterinary Biologics Permit.

6. **Invasive species in Arizona**

There are some targeted Hungry Pests with federal quarantines in certain areas of Arizona. Other federal and state quarantines may apply. Arizona has some crop, forest or urban areas where these pests or diseases could survive year-round.

7. **USDA APHIS electronic permits**

APHIS eFile is a web-based system that allows users to apply for and receive import, interstate movement, transit, release permits, permit renewals and amendments, submit annual reports and receive regulatory guidance.

- Visit APHIS eFile.
- Contact USDA-APHIS.

iii. U.S. Fish and Wildlife Service Permits

The U.S. Fish and Wildlife Service issues permits under various wildlife laws and treaties at different offices at the national, regional and wildlife port levels. Generally, all wildlife, including parts and products, imported or exported from the U.S. for any purpose must be declared and cleared through an authorized wildlife port. We do not issue **hunting and fishing licenses**. Instead, those are issued by state wildlife agencies.

Permits provide a means to balance the use and conservation of protected species. You can help conserve protected species by complying with these laws to ensure that your lawful activities are separate and distinct from those that harm wild populations.

Service permit programs ensure that such activities are carried out in a manner that safeguards wildlife. Additionally, some permits promote conservation efforts by authorizing scientific research, generating data or allowing wildlife management and rehabilitation activities to go forward.

Before you get started, first determine whether your species of interest is listed under domestic and international law and whether you need a permit.

The U.S. Fish and Wildlife Service understands that there are occasions when

prohibited activities may be unharmful or even beneficial to protected species. Our objective is to use permits to authorize and monitor activities consistent with the conservation, protection and enhancement of wildlife, plants and their habitats.

Permits also facilitate the collection of species-specific trade data. We can determine trends in trade from the data derived from permits to ensure that wildlife trade is sustainable. Most of the permits we issue are for the import and export of species that are protected by the Convention on the International Trade in Endangered Species of Wild Fauna and Flora. Several additional laws that protect wildlife can also be relevant.

Follow the three-step process below to determine if a permit is needed:

1. **Step one: Determine the scientific name of your species**

   What is the species of wildlife or plant? To determine whether these regulations apply to your species of interest, you will first need to determine the scientific name — genus and species — as wildlife protections are designated at the species or sometimes the subspecies level.

   For example, the scientific name of:

   - Brazilian rosewood is genus Dalbergia, species nigra, or **Dalbergia nigra**.
   - Hawksbill sea turtle is genus Eretmochelys, species imbricata or **Eretmochelys imbricata**.
   - Monk parakeet is genus Myiopsitta, species monachus, or **Myiopsitta monachus**.
   - Sumatran tiger is genus Panthera, species tigris, subspecies sumatrae, or **Panthera tigris sumatrae**.

   Ask a veterinarian, scientist or qualified appraiser to help you determine what type of wildlife or plant you have. You may also be able to find the scientific name online.

2. **Step two: Determine how your species or specimen is protected**

   Once you know the scientific name of your species of interest, determine whether the species is protected under U.S. or international law. Keep in mind that a species may be listed under multiple laws, so that multiple authorizations may be required.

   We may be able to issue one consolidated permit authorizing the activity, provided certain criteria are met if more than one type of permit for an activity is required by multiple regulations. Please start by checking the following species lists:

- **CITES**: Search by scientific name or common name in the list of CITES Species.
- **Endangered Species Act**: Visit the U.S. Fish and Wildlife Service's Endangered Species program website.
- **Lacey Act**: Check the current list of injurious wildlife. Injurious wildlife are species, including offspring and eggs, designated through regulation to be injurious to the health and welfare of humans, the interests of agriculture, horticulture or forestry and the welfare and survival of wildlife resources of the U.S. Species. This includes offspring and eggs, designated through regulation to be injurious to the health and welfare of humans, the interests of agriculture, horticulture or forestry and the welfare and survival of wildlife resources of the U.S.

  Please see our guidance if you are a constrictor snake owner. Also, visit the Fish and Aquatic Conservation Program's Injurious Wildlife webpage.
- **Marine Mammal Protection Act**: The U.S. Fish and Wildlife Service has jurisdiction over the walrus, polar bear, sea otter, marine otter, West African manatee, Amazonian manatee, West Indian manatee and dugong. All other marine mammals are regulated by the National Oceanic and Atmospheric Administration Fisheries. Learn more about marine mammal permits at our webpage on the topic.
- **Migratory Bird Treaty Act**: View the list of MBTA-protected birds.
- **Wild Bird Conservation Act**: See the species listed under the Wild Bird Conservation Act.

3. **Step three: Discover which application you need**

What activity do you seek to conduct? Generally, if you seek to conduct import, export, take or conduct interstate or international commercial activities and your species of interest is protected under domestic or international law but can also be legally traded. The next step is to apply for a permit. First, find the permit application you need.

Please note: If your specimen is only protected under CITES Appendix II or III and you are traveling with or moving your personal belongings, you may meet the CITES personal and household effects exemption requirements.

A permit is required if you already know that your species of interest or your activity do not meet the criteria of the CITES personal and household effects exemption, such as all commercial endeavors, all CITES Appendix-I, ESA, WBCA, MMPA and MBTA protected species and species listed as Injurious Wildlife under the Lacey Act.

Are you now ready to apply for a permit? If so, you can search for the

application you need and review our tips on completing application forms.

- Contact U.S. Fish and Wildlife Service.

iv. Other permits or agreements

Depending on geographical locations or protected areas, additional permits or agreements with local governments, sovereign nations or organizations may be needed to conduct field research projects. Before conducting any fieldwork, check with local authorities for additional permits or agreements that may be needed.

H. Safety equipment and supplies

Field research projects may require traveling to other countries and remote locations and working at field sites that lack basic services such as potable water, plumbing, reliable communications or availability of emergency medical services. During planning field research projects, it is essential to budget for appropriate safety measures, including purchasing emergency equipment and supplies.

Bring all required safety equipment to each field research site, including personal protective equipment. List all the required equipment, gear and supplies in the ASU Field Safety Plan. Assemble the supplies listed in the ASU Field Research Safety Kit for remote outdoor field sites. See **Appendix K**. Bring 10–20% more consumables than you anticipate using during the research project for remote outdoor sites.

i. Transportation of personnel and supplies

Include all modes of travel for all personnel traveling to the field research site in your field safety manual. A list of vehicles or equipment used at the field site should also be included in the field safety plan, along with any required training or required work practices to use the equipment.

I. Communication

Communication between all field research participants is vital to ensure a successful and safe research experience. All team members need to be physically, mentally and logistically prepared to participate in the field research experience. Additionally, a communications plan should be included in the Field Safety Plan in a way to minimize singular points within the communications pathway, e.g., a single person overseeing access to a single satellite phone and to detail special circumstances that may be part of the field research, e.g., involvement of outside organizations or third parties.

The following guidelines will help prepare team members for the field research experience:

i. Participants

Participants need to understand the following:

- Emotional safety: ASU tolerates zero harassment as noted above:
  - Alcohol and other drugs: Review rules, legality and how these can affect the learning environment and group dynamics.
  - Amorous or romantic relationships: Refer to the employee and student code of conduct policies.
  - ASU is committed to providing an environment free of discrimination, harassment or retaliation for the entire university community, including all students, faculty, staff and guests. ASU expressly prohibits discrimination, harassment and retaliation by employees, students, contractors or agents of the university based on any protected status: race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, genetic information and Title IX sexual harassment.

    Unless a person is restricted by law from doing so, any employee who is informed of or has a reasonable basis to believe that sexual harassment, including Title IX sexual harassment, has occurred, shall immediately report all information regarding the occurrences to the Office of University Rights and Responsibilities or the Title IX Coordinator or the Dean of Students office.
  - Cell phones or other electronics: Establish guidelines for their use during field research activities. Minimize singular points of communication.
  - Smoking: Follow the ASU rules for smoking. ASU has a smoke or tobacco-free policy. In places where smoking is allowed, follow local regulations for smoking.
- Get input from all participants and answer any questions from participants. It may be necessary to schedule individual meetings to determine if a field research experience is the right choice for some of the participants.
- Provide field research project information to all participants. Include a description of what to expect according to the field site, occupational health forms for each participant, waivers, contact information for principal investigators or field site leaders, other participants and emergency contact information. Establish shared team definitions of roles, responsibilities and cultures.
- Review expected hazards and conditions, security concerns and travel logistics.
- Review important rules in detail, including:
  - Personal physical safety rules: Include all rules related to physical

safety. For example, always wearing seat belts, not walking alone, etc. Discuss required training for participating in field research.

- Review the Field Safety Plan in detail.
- Schedule a field research orientation meeting before going out in the field. Set the tone for a safe learning field research environment by clearly discussing the **participant's code of conduct**, expectations, rules, duties and consequences for all team members. Schedule additional planning meetings as needed.

ii. Field site local contacts and collaborators

Principal investigators or field research project leaders must contact local contacts or collaborations before field projects begin. They must provide all pertinent information on local resources to all team members.

iii. ASU personnel

Principal investigators or field research project leaders must share the completed safety plan with the department head or their designee and keep a file on campus. The department head or designated contact person on the ASU campus must know the field research team's location at all times. The safety plan must be updated and shared with the designated contact person if there are any changes. The designated on-campus contact must be in frequent communication with the field research team. A frequency schedule and means of communication should be established before the field research begins.

The on-campus person must attempt to contact the field research team if the field research team leader does not communicate with the designated on-campus contact at the scheduled times. This includes contacting additional field research team members, local contacts or collaborators or local authorities.

Contact the department head, ASU Global Education Office, ASU Risk Management or ASU EHS for assistance if no contact with the field research team can be made.

An established communications plan should include a process or method for creating incident reports and determining how they will be resolved.

Chapter V — Training

All ASU research, whether conducted in laboratory settings or outdoor field settings, requires safety training. All personnel participating in field research activities must complete the appropriate training and completion of training must be documented.

All required trainings must be included in the Field Safety Plan. Required training will vary depending on the nature of the field research as follows:

- **Field Safety Plan training: All participants must be trained on all components of the Field Safety Plan. This training is equivalent to lab-specific or job-specific training when working at an on-campus location.**

ASU committee required training:

A. Institutional Biosafety Committee

- **Comprehensive Biosafety Tri-University Training:** ASU biosafety training is a comprehensive training that fulfills the training requirement for work with infectious materials in laboratories, materials of human origin that fall under the OSHA Bloodborne Pathogen Standard and NIH Guidelines* training. The frequency of refresher training depends on the materials being utilized, as outlined by the chart. You can access the course on Workday.

- **Field project-specific training**: Field project-specific training is ongoing training provided by the principal investigator or field project leader on the specific materials and procedures to be performed in the field research sites. The PI or field project leader must provide the field project-specific training before allowing individuals to work with biohazardous materials in the field research sites and whenever policies or procedures change.

*If recombinant or synthetic nucleic acid molecules are used in field research projects.

B. Institutional Animal Care and Use Committee

To use or work with any live vertebrate animals at ASU, all faculty, staff, graduate students and undergraduate researchers must:

- Achieve certification in the animal care and use training program.
- Receive clearance from the Occupational Health and Safety Program.

The only individuals allowed to work with animals without meeting these requirements are students enrolled in a **formal ASU course**, i.e., one that has a university course number, such as BIO361, that includes the use of live animals. In such courses, the students are directly supervised by the instructor or teaching assistant, both of whom **must** be listed on an IACUC protocol.

Individuals receiving live animal training from researchers proficient in the techniques or from Department of Animal Care and Technologies, DACT, personnel **must** be on an ASU IACUC-approved protocol before receiving that training.

The ASU animal training is comprised of three levels:

- **Level I Basic** is **required** of all animal users, animal handlers and IACUC members and it covers the rules and regulations regarding animal use at ASU and alternatives to animal use. Recertification is **required** every four years. Level I training is an online training module.
- **Level II Species** is **required** of all animal users and animal handlers who come into direct contact with live animals. This training is species-specific and each user **must** be certified for each species of animal they will work with. Recertification is **required** every four years. Level II training is an online training module.
- **Level III** covers training on specific procedures performed on animals and entails hands-on instruction by an authorized trainer, who may be from the Department of Animal Care and Technologies or research personnel, see below. Level lll training is **required** of all individuals who work with animals. Procedures **requiring** Level III training include:
    - **Administration:** Oral dosing, oral gavage, IN
    - **Anesthesia:** Specify injectable or inhalation
    - **Aseptic technique:** Prerequisite or concurrent with surgery
    - **Blood collection:** All forms, including submandibular, cardiac, lateral saphenous, tail vein and ear vein
    - **Euthanasia:** Procedure-specific, including secondary method
    - **Genotyping:** Ear punch, toe clip, tail clip
    - **Injections:** All forms including SC, ID, IM, IP, IV, RO
    - **Perfusion**
    - **Physical Identification:** Ear punch, ear tag, toe clip
    - **Post-surgical monitoring**
    - **Surgery**: Procedure-specific

Level III training is deemed adequate once the individual has developed the skills to consistently perform the procedure independently without supervision. Once this level of training is reached, an authorized trainer, such as the DACT staff member providing the training, the individual's principal investigator or an alternate contact designated by the PI in the protocol **must** submit a Level III Training Documentation form to IACUC within five business days.

An individual **cannot** perform a procedure independently until a Level III Training Documentation form has been submitted and approved by the IACUC.

ASU faculty members and medical professionals who have previous experience

may substitute the hands-on training requirement by emailing the IACUC office a vita or a list of published work and indicating on the protocol those procedures they are skilled to perform. Those skills will be verified during a post-approval monitoring session of the first surgical procedure. **All other individuals**, whether coming to ASU with experience or not, **must** receive training or have their skills verified by an authorized trainer before submitting the Level III Training Documentation form.

DACT-provided training

DACT can provide the **IACUC-required** Level III training upon request and **free of charge**. This training can cover basic procedures including handling, delivery methods, sampling methods, anesthesia, aseptic technique and euthanasia to more advanced surgical procedures on mice, rats, guinea pigs, rabbits, frogs, chickens and other species. In addition to being an IACUC requirement, appropriate training in these methods helps to ensure that animals are handled and treated humanely and that research results are valid.

Depending on the **required** skill of the procedure and the individual's comfort level, multiple training sessions may be required.

Contact the Department of Animal Care and Technologies to schedule a session. Records of all DACT-provided training will be sent to the IACUC to provide Level III compliance.

C. Institutional Review Board: Required training for researchers.

All researchers and study team members conducting human subjects research at ASU **must** complete training before being approved to work on a project.

Only individuals engaged in human subjects research need to be listed as study team members on the IRB submission and need to complete CITI Training. We define engagement as being involved in any of the following activities:

- Data analysis.
- Data collection, unless they are collecting data as part of their normal job and are not involved with the research project beyond their job, e.g., a hired phlebotomist or professional transcription service.
- Data storage or access to study data at the individual level. If you have questions about whether someone is engaged in research, contact the Office of Research Integrity and Assurance.
- Obtaining informed consent of a human subject for research.

Note: Online CITI training is required.

ASU provides IRB training through a third party called CITI Program. Complete one of the following, depending on the type of research being performed:

- **IRB Biomedical research — Group 1:** Complete this training if your

research includes medical procedures, athletic procedures or studies health outcomes.
- **IRB Social and behavioral research — Group 2:** Complete this training if your research involves social and behavior techniques such as interviews or surveys.

Researchers who plan to conduct clinical trials must complete one of the following additional courses through CITI Program noted below:

- **GCP – Social and Behavioral Research Best Practices for Clinical Research.**
- **GCP for Clinical Trials with Investigational Drugs and Biologics — ICH Focus.**
- **GCP for Clinical Trials with Investigational Drugs and Medical Devices — U.S. FDA Focus.**

Discuss with your faculty mentor or contact the Office of Research Integrity and Assurance if you are unsure which training to complete.

CITI Program training for the IRB course is valid for 48 months and the GCP course is valid for 36 months.

IRB courses are different from the Responsible Conduct of Research courses. Only the courses that begin with IRB count toward IRB training requirements.

Medical emergency trainings

Federal and state regulations require that first aid supplies and individuals trained to render first aid are present in the absence of a hospital, infirmary or clinic in near proximity to the workplace or field research site in addition to training on potential hazards in the field research sites. This applies to most field research sites where emergency medical services may be limited or delayed.

In addition to first aid, Cardiopulmonary Resuscitation and Automated External Defibrillator training is highly recommended for individuals conducting fieldwork in remote or uncontrolled environments.

First aid

First aid training will prepare field research participants to respond to specific medical situations and aid injured personnel while waiting for medical professionals to arrive. First aid training covers best practices for a wide range of conditions and can range from basic courses to advanced, as well as Wilderness first aid.

Cardiopulmonary resuscitation

CPR is an emergency life-saving procedure that is performed when someone's heartbeat or breathing has stopped. According to the American Heart Association,

immediate CPR can double or triple the chances of survival after cardiac arrest. CPR training provides the information and the skills needed to assist others during breathing and cardiac emergencies.

Automated external defibrillator

An AED is a portable, life-saving device used to help individuals experiencing sudden cardiac arrest. An AED is easy to use and can analyze the heart's rhythm and, if necessary, deliver an electrical shock or defibrillation to help the heart re-establish an effective rhythm. AED training provides the information to know how and when to use an automated external defibrillator.

First aid, CPR and AED Training are available through ASU Sun Devil Fitness or ASU Employee Health.

Wilderness first aid training

Wilderness first aid training is appropriate for outdoor field research sites or for visiting remote sites because it covers first responder information and includes relevant scenarios that may be encountered in field research sites.

The National Outdoor Leadership School is the largest wilderness medicine training provider in the U.S. Wilderness First aid training is also available through the American Red Cross or ASU Employee Health Emergency Medical Technicians. Wilderness First Aid Training is also available through Sun Devil Fitness. The course offering utilizes the American Red Cross Wilderness and Remote First Aid materials. A 2-year certification is provided upon successful completion. Visit the Sun Devil Fitness Safety Education page to learn more.

D. Environmental Health and Safety training

The Environmental Health and Safety department at ASU provides various training that may be required or highly recommended for field research sites depending on the nature of the work conducted. The list of required training will be outlined in the Field Safety Plan. Please contact EHS to assist you with determining your required and recommended safety training and provide enrollment and registration links to both the corresponding classroom and online courses.

E. Non-Discrimination training

ASU is committed to a positive work environment where employees respect each other and our students. ASU has two online training modules: Preventing Harassment and Sexual Violence and Title IX Duty to Report. All faculty, staff and student workers must complete mandatory training sessions within 90 days of their hire date.

i. Preventing harassment and discrimination

This training covers how to identify and prevent prohibited behavior and where and how to report concerns.

Access training on Workday.

ii. Duty to report

All faculty, staff and student workers must complete this 15-minute online training module. The training explains university policy and provides important ASU resources and contact information to report incidents of unwanted sexual conduct and other inappropriate behavior. Title IX Duty to Report training is available to student workers, staff and faculty in Workday.

F. Department-specific training

Each department may have additional required or recommended training for field research projects. Training required by the department will be included in the Field Safety Plan and will be provided by the principal investigator, field site lead or their designee. The following are some examples of additional training that may facilitate field research:

i. Leadership skills

Several organizations provide training focusing on group leadership skills, emphasizing outdoor contexts. One excellent resource document is the NOLS Leadership Educator Notebook, which provides excellent guidance on planning and leading field research excursions.

ii. Basic outdoor skills

Knowledge of outdoor skills including map-reading, compass use, cross-country navigation, camping, cooking over a fire or with a camp stove, field sanitation practices, treating drinking water and other skills are very useful in field research sites. Basic outdoor skills training may be provided by outdoor recreation programs in and outside the university. Good examples of basic outdoor skills are outlined in the University of Alaska Fairbanks Field Safety 101 and NSF's Arctic Field Training.

iii. Field ethics

Many field research sites are fragile and can be damaged easily. It is very important to adapt appropriate field practices to minimize any lasting negative impacts on the field sites.

A national educational program called Leave No Trace has developed a set of principles that can be applied when working outdoors, from field sites to wilderness areas to local parks. There are guidelines available for specific habitats, including rivers, deserts, etc. and for areas outside the U.S. These guidelines describe how to adhere to the following seven LNT principles:

- Be considerate of other visitors.
- Dispose of waste properly.
- Leave what you find.
- Minimize campfire impacts.
- Plan and prepare.
- Respect wildlife.
- Travel and camp on durable surfaces.

Please visit the Leave No Trace Center for Outdoor Ethics website for more information.

G. Project-specific and specialized training

Field research projects may require specialized training based on specific tasks to be conducted in the field. The Principal Investigator or field project leader will ensure that all personnel receive the appropriate training in specific skill areas to allow personnel to make effective risk assessments in the field. The following section includes a list of specialized training that may be required, other training may apply depending on the nature of the field project.

i. Scientific diving

Research groups at ASU may engage in underwater research activities involving diving. To promote diving safety, ASU maintains an institutional membership in the American Academy of Underwater Sciences, which has established standards and certification requirements for scientific diving.

AAUS member organizations help protect themselves from possible fines and civil suits by committing to meeting AAUS requirements and adhering to standards recognized as the standard practices within the scientific diving community.

Under ASU policy RSP207 and federal regulations, all research and related activities involving underwater diving for which ASU is a responsible participant, regardless of whether the activity will receive funding or not, **must** adhere to these standards.

The application and medical forms can be found on the Office of Research Integrity & Assurance Scientific Diving forms page. Please submit the application

and all supporting documents. Any medical clearance and surveillance forms will be stored with ASU Employee Health.

Please note that ASU does not currently provide scientific diving training. To conduct scientific diving at this time, you **must** have been previously trained as a scientific diver through an institution that is an organizational member of AAUS.

Please see the Office of Research Integrity and Assurance Scientific Diving Page for more information about the ASU Dive Program.

ii. Climbing and working at heights

Falls from heights are consistently among the top causes of work-related injuries and fatalities in the U.S. Fieldwork done at heights or near edges or cliffs must include safe practices and the appropriate use of equipment, e.g., full-body harnesses, helmets and other safety gear. Equipment must fit properly, be inspected consistently and be properly used to prevent injuries and ensure compliance with OSHA regulations. The EHS department offers the following training to assist with climbing or working at heights:

- Cranes, hoists and slings
- Fall Protection
- Ladder Safety

iii. Powered tools or equipment

Consult with EHS before using powered tools or equipment to determine the appropriate training. It is important to follow the manufacturer's instructions when working with powered tools or equipment and to keep the user's manual accessible. Prerequisite training and safe work practices for the use of powered tools or equipment must be included in the Field Safety Plan. In some cases, a Job Hazard Analysis must be completed to determine appropriate safe practices and personal protective equipment or PPE when working with powered tools or equipment. Training offered for power tools are:

- Forklift operator training
- Machine shop safety

Please visit the Facilities and shop safety and EHS training website for additional training available.

iv. Excavating or trenching

Excavating or trenching projects include specific hazards, including:

- Cave-ins or collapses that can trap or bury personnel.
- Exposure to a hazardous atmosphere including gas, vapor, dust or lack of

oxygen.
- Flooding.
- Physical hazards from equipment use.
- Respiratory hazards caused by disturbing the soil that may contain Coccidioides fungi, which causes Valley Fever or other environmental contaminants.
- Trips and falls if the edge is not clearly marked or protected.

Some excavations may trigger OSHA regulatory requirements depending on the depth. Consult with EHS for assistance and guidance in establishing safe work practices for excavating or trenching projects.

v. Confined spaces — Caves, vaults and mines

Entering confined spaces presents specific hazards, including:

- Asphyxiation due to limited oxygen
- Becoming trapped in a confined space
- Combustible dusts
- Explosions
- Fall hazards
- Flammable liquid or gases
- Hazardous gases and vapors such as carbon monoxide, carbon dioxide, Freon, hydrogen sulfide, welding gases and ammonia
- Increased risk due to access limitations in confined spaces, often unreliable communications and isolated, dark, rugged or uneven conditions
- Physical hazards from unstable structural integrity and low overhead clearance

A campus-wide Confined Space Entry Program has been developed to ensure personnel and entrant safety and prevent personal injury from work in confined spaces per the requirements of the Occupational Safety and Health Administration's Permit-Required Confined Space Entry Standard, 29 CFR §1910.146.

The following training is available for work in confined spaces:

- Confined space entry training

vi. Wildlife

Field research projects include the risk of zoonotic and vector-borne diseases and physical threats from wildlife attack or bites. Best practices for trapping or avoiding wildlife will be identified during the required institutional review of animal

protocols. However, it is important for field research personnel to be aware of the risks and follow safety practices at all times.

Additional PPE, vaccinations or training may be required for species that transmit disease. Consult with the biosafety officer and EHS Biosafety team, campus veterinarian and ASU Employee Health for additional guidance. A Field Safety Research-Risk Matrix is included as Appendix L.

1. Bats

Bats — order Chiroptera — are mammals studied in the U.S. and internationally, found in rural and urban areas, and are of particular interest.

Bats are reservoirs for many infectious agents, including parasites, bacteria, viruses and fungi. Many of these infectious agents lead to diseases in humans, including but not limited to rabies, histoplasmosis, salmonellosis and coronaviruses, including SARS-CoV-2, the virus that causes COVID-19.

Transmission of zoonotic diseases is primarily by direct contact, ingestion, indirect contact with invertebrate vectors, e.g., mosquitoes, fleas and contaminated inanimate objects or inhalation of aerosolized materials. Furthermore, humans can bring disease to vulnerable bat populations, so care must be taken to prevent transmission in both directions.

Guidance and additional information on research in areas where bats may be present is available from Environmental Health and Safety. Please consult with the biosafety officer and EHS Biosafety team, campus veterinarian and ASU Employee Health before planning any field research activities involving bats.

2. Pathogens

Working in the field has the potential to expose ASU personnel to pathogens. It is recommended that all personnel engaging in travel research pathogens that may be present in the area. Suggested resources include local public health departments, the Centers for Disease Control and Prevention, and the United States Department of State Travel Advisories.

Information may also be found at ASU Campus Health, Employee Health, and by contacting the EHS Biosafety and Biosecurity team. Vaccinations or other prophylactic medications may be available for pathogens present.

Avoid contact with sick or dead wildlife unless absolutely necessary no matter where you travel. If you must handle deceased animals, use appropriate personal protective equipment (PPE) as outlined in the Appendix L — Field safety research risk matrix.

vii. Clinical work or biological samples

Field research projects, including clinical work, collecting and handling human biological specimens are covered by the IBC and the ASU Exposure Control Plan. The ASU ECP includes safe work practices, appropriate PPE, vaccination information, post-exposure protocols and incident reporting.

OSHA requires employees that may be exposed to human blood or other potentially infectious materials be provided Bloodborne Pathogen Training and offered the Hepatitis B vaccination at no cost to the employee. A Hepatitis B form must be on file with ASU Employee Health.

- Comprehensive Biosafety Tri-University Training
- Hepatitis B vaccination

Contact the ASU biosafety officer for more information on performing clinical work or work with biological samples.

viii. Transporting hazardous materials, hazardous waste or biological specimens

Contact EHS for field research projects that include transporting the regulated hazardous materials listed below:

- Certain batteries
- Chemicals
- Compressed cylinders, whether filled or empty
- Dry ice
- Ethanol
- Equipment containing batteries, including but not limited to PCs, tablets, cell phones and eVapor cigarettes
- Gasoline
- Genetically modified organisms or microorganisms
- Infectious and biological substances
- Liquid nitrogen
- Radioactive materials

Shipping hazardous materials requires specialized training. Please contact EHS for assistance with shipping. In addition, Materials Transfer Agreements, permits or export licenses may be required before shipping hazardous materials. Contact the Office of Research Integrity and Assurance for guidance.

Chapter VI — Incident reporting

Many different emergencies, including injuries or incidents, may occur when performing field research in uncontrolled environments. Having established emergency response plans, first aid training and other training will help to effectively manage situations and help mitigate negative outcomes.

The priority in any emergency or incident is to address medical care needs. Report incidents to campus once urgent medical care needs are met, the situation is stable and is safe for individuals to report. University personnel will evaluate and provide support as needed for each situation. In addition, ASU must also comply with different reporting requirements to external agencies including, but not limited to OSHA, CDC, NIH, NSF, USDA or internal departments or committees, including Title IX reporting to Title IX Coordinator, IBC, IACUC, IRB or other committees.

ASU Policy EHS 115 Incident Reporting and Investigations requires that all incidents resulting in an injury to an ASU employee, student, or visitor or damage to ASU property of more than $500 must be reported to Environmental Health and Safety.

For this policy, an incident is defined as an occurrence or event that interrupts normal procedures or precipitates a crisis that results in any of the following:

- Damage to ASU property over $500.
- Events likely to cause potential injury or illness to an ASU employee, student or visitor.
- Injury or illness to ASU employees, students and visitors.

Incidents involving ASU employees and non-ASU employees may be reported electronically or by calling 480-965-1823 or 480-727-9669.

Insurance-related information is available on the Insurance Services webpage and additional insurance forms are available on the Insurance Forms webpage. Please forward insurance-related forms to Risk Management at Mail Code 6512 or fax to 480-727-9055.

As a reminder, supervisors or other management personnel completing incident investigation reports related to an employee injury should determine an initial or apparent cause of the accident and ensure the correct action is taken, as appropriate, to prevent others from being injured in the same manner. As a general rule, you should ask why an incident occurred at least three times to determine if corrective action is necessary. Please contact EHS at 480-965-6219 or email us if you require assistance in determining the cause of an incident.

Incident response procedures for local, domestic and international incidents are outlined below.

Local and domestic emergencies:

During life-threatening injuries or illness:

1. Call 911 or seek medical attention immediately.
2. Know the physical location and provide accurate directions to the field location to emergency medical personnel.
3. Notify the supervisor.
4. Complete the ASU incident report.
5. Employee or Supervisor: Call Arizona's Early Claim Reporting Line at 1-800-837-8583 or complete the Supervisor's Report of Injury. The claim must be made within 24 hours.
6. Supervisor: Visit ASU's HR webpage and complete the Supervisor's Accident Investigation Report. Have the injured employee sign and date the State Risk Management Authorization Form.
7. Supervisor: Contact ASU Environmental Health and Safety within 24 hours of the incident.
8. Supervisor: Return all completed forms to Human Resource Employee Service Center within five days from the date of injury.

For additional guidance, please see ASU's Emergency Response Guide.

International emergencies: Incident-specific procedures

A. Student disciplinary emergency, i.e., Code of conduct violation

Please follow these steps in a student disciplinary emergency:

1. Do what is necessary to ensure the safety and care of all field research personnel.
2. Document the following:
   - Current location of the student
   - Details of all incidents, including time and location
   - Details of on-site response
   - Has the student made any threats or assaulted anyone, including themselves?
   - Is there any pending legal action that would prevent the student's return to the U.S.?
   - Pictures of the area or damage, if applicable
3. Determine if the student has sufficient funds for a change in housing or plane ticket dates if dismissed from the program.

4. If this travel has been registered in the ASU Student International Travel Registration System, contact the Global Education Office at 480-965-5965 or 24/7 at 480-965-3456.
5. Request that other field research personnel refrain from discussing the incident on social media if applicable.
6. Issue a Notice of Warning or Notice of Termination, pending guidance from ASU.

Actions to take if the incident is not an emergency:

1. Ensure the safety and care of all field research personnel.
2. Document the following:
    - Details of all incidents
    - Details of any on-site response
    - Follow-up is required for the remainder of the field research placement.
3. If this travel has been registered in the ASU Student International Travel Registration System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456.
4. Issue a Notice of Warning to the student involved, pending guidance from ASU.

B. Traveler has fallen ill or been injured

Actions to take in a medical emergency:

1. Ensure the affected traveler's safety.
2. Contact local emergency services if necessary.
3. If the traveler is registered in the ASU Student International Travel Registration System, contact On Call International at 603-952-2660 for information on the nearest medical facility, if necessary. If the traveler is an employee and is **not** registered in the ASU Student International Travel Registration System, follow the ASU International Travel Insurance Card instructions.
4. Get the traveler any immediately necessary medical treatment. Do **not** pay for the individual medical care.
5. Document the following:
    - Contact details of the medical facility where the traveler is receiving medical treatment and the name of the Healthcare Provider.
    - Contact information of traveler's current location.
    - Medical treatment the traveler has received.
    - What is the diagnosis? The prescribed treatment?
    - Who is with the affected traveler now?
6. Urge the affected traveler to call parents, guardians and family members. Do not call the traveler's emergency contacts at this stage, even if they are unconscious.
7. If the traveler is registered in the ASU Student International Travel Registration System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456.

8. Ensure the safety and care of other field research personnel.
   Request that other program field research personnel refrain from discussing the incident on social media until the family can be notified.

Actions to take if the condition is not an emergency:

1. Ensure the traveler's safety.
2. If the traveler is registered in the ASU Student International Travel Registration System, contact On Call International at 603-952-2660 if necessary.
3. Help the traveler get any required medical treatment.
4. Encourage the traveler to call their parents, guardians or family members.
5. If the traveler is registered in the ASU Student International Travel Registration System, urge them to complete an Incident Report online through their travel registration record in MyGEO. Call GEO at 480-965-5965 or email Travel Safety to report the incident.
   If the traveler is **not** registered in the ASU Student International Travel Registration System, submit an incident report at the EHS website.

C. Traveler is experiencing distress or mental illness

Actions to take in a mental health emergency:

1. Ensure the traveler's safety.
2. If the traveler is registered in the ASU Student International Travel Registration System, contact On Call International at 603-952-2660 for information on nearest medical facility.
   If the traveler is an employee and is **not** registered in the ASU Student International Travel Registration System, follow the instructions on the ASU International Travel Insurance Card.
3. Help the traveler get any necessary medical treatment.
4. Document the following:
   - Any medical treatment the traveler has received.
   - Any observations of the traveler's behavior.
   - Contact details of the medical facility where the traveler has received treatment.
   - Contact information of the attending physician.
   - Contact information of the traveler's current location.
   - Medications prescribed to the traveler. Does the traveler currently have access to medications?
5. Ensure the safety and care of other field research personnel.
6. If the traveler is registered in the ASU Student International Travel Registration System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456.
   If the traveler is **not** registered in the ASU Student International Travel Registration System, submit an incident report at the EHS website and follow the instructions on the ASU International Travel Insurance Card.

Note: If you consider the situation an emergency, call the local emergency services number first, stay with the traveler and follow the emergency action steps above.

Actions to take if the situation is not an emergency:

1. Follow these steps first:
   a. Talk to the traveler in private.
   b. Review what you have seen or heard that is raising your concern.
   c. Listen carefully.
   d. Show concern and interest.
   e. Repeat back the essence of what the traveler has told you.
   f. Avoid criticizing or sounding judgmental.
   g. Suggest connecting with a free counselor through ASU Counseling Services for students or Employee Assistance for employees.
   h. Offer to help arrange for the traveler to see a local counselor if appropriate.
2. If the traveler is registered in the ASU Student International Travel Registration System, urge the traveler complete an Incident Report online through their travel registration record in MyGEO,
   Call GEO at 480-965-5965 or email Travel Safety to report the incident. If the traveler is **not** registered in the ASU Student International Travel Registration System, submit an incident report at the EHS website.

D. Traveler has been a victim of sexual violence, including harassment

Remind the traveler at an appropriate time that you are a mandatory reporter and that you will be disclosing information about the event to ASU. Let the traveler know that a university advocate will be contacting them directly to provide information about resources.

Actions to take when sexual misconduct is reported:

1. Ensure the victim's safety.
2. Ensure the safety and care of other field research personnel.
3. If the traveler is a student, contact GEO at 480-965-5965 or 24/7 at 480-965-3456. Contact the Title IX coordinator if the traveler is an employee. **Crisis support** is available 24/7 by contacting:

   For students:
   EMPACT Hotline: 480-921-1006
   For employees:
   Behavioral Health Crisis Line: 602-222-9444
4. Ask the individual if they would like you to coordinate any of the following*:
   - Contact local emergency services or law enforcement.
   - If the traveler is registered in the ASU Student International Travel

Registration System, contact CISI Insurance at 603-952-2660 for information on the nearest medical and counseling facilities.

If the traveler is an ASU employee and is not registered in the ASU Student International Travel Registration System, please call the 24/7 phone number located on the ASU International Travel Insurance Card.

- Get the traveler any requested medical treatment, including STD testing.

5. Document the following:
    - Contact details of the medical facility where the traveler has received or is receiving medical treatment.
    - Contact information of the traveler's current location.
    - Details of the incident.
    - Medical treatment the traveler has received, if any.
    - Name of the attending physician.
6. Determine if the traveler is interested in returning to the U.S.
7. If you know that other field research personnel are aware of the event, request that they refrain from discussing the incident on social media.

***Before taking these actions, carefully consider the local context and the potential to inadvertently expose the individual to additional harm.**

Note: If there are allegations of sexual violence, including harassment, against another student, ASU employee or ASU vendor, managing the incident will be more complicated. In such cases, contact GEO or the Title IX coordinator as soon as possible to discuss the next steps.

Filing a sexual harassment complaint, including acts of sexual violence or Title IX Complaint.

The following list outlines the offices that will take the report and provide support whether you are reporting as part of your Mandatory Reporter obligations or reporting because **you** feel harassed:

- If an employee is alleged to have violated policy: File an incident report with the Office of University Rights and Responsibilities at URR@asu.edu or 480-965-5057.
- If a student is alleged to have violated policy: File an incident report with the Dean of Students or Office of Student Rights and Responsibilities.
- If you are unsure about where to report or want to file a formal complaint: Contact the university Title IX Coordinator.

E. Traveler has been the victim of a crime

Actions to take when a traveler is a crime victim:

1. Ensure the traveler's safety.
2. Contact appropriate local law enforcement.

3. Ensure the safety and care of other field research personnel.
4. Document the following:
    - Any medical treatment the traveler has received.
    - Contact details of the medical facility where traveler has received or is receiving medical treatment.
    - Contact information of the traveler's current location.
    - Details of the incident.
    - Time and location of the incident.
5. Notify the nearest U.S. embassy if the traveler needs emergency support from the U.S. government in-country. If calling, ask to speak with Post 1, the Marine on duty.
6. Determine if the traveler is interested in returning home.
7. If the traveler is registered in the ASU Student International Travel Registration System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456.
   If the traveler is an employee and is not registered in the ASU Student International Travel Registration System, contact the nearest U.S. embassy or Consulate or call 202-501-4444.
8. Request that other field research personnel refrain from discussing the incident on social media until the victim's family can be notified.

Assistance for American victims of crime abroad:

Travelers who have been victims of a crime abroad must review the government page for victims of crime abroad.

F. Traveler is missing

Actions to take when a traveler is missing

1. Talk to other field research personnel to determine when individual was last seen, where and with whom.
2. Contact the individual through several means:
    - Contact the lodging location provided if you have documented the individual's plans for weekend travel or free time.
    - Email
    - Mobile phone
    - Phone number of last known location
    - Social media, e.g., Facebook, WhatsApp, etc.
    - Visit individual's accommodation
3. Notify local emergency services as soon as is prudent.
4. Document the following:
    - Date, time and location where the individual was last seen
    - Known plans for travel or to be absent
5. If the traveler is registered in the ASU Student International Travel Registration

System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456.
If the traveler is an employee and is **not** registered in the ASU Student International Travel Registration System, please call the 24/7 phone number located on the ASU International Travel Insurance Card.

6. Notify the nearest U.S. embassy. If calling, ask to speak with Post 1, the Marine on duty.
7. Ensure the safety and care of other field research personnel.
8. Request that other field research personnel refrain from discussing the incident on social media until the family is notified.

Assistance for American citizens missing abroad.

G. Political, natural or anthropogenic disaster

Actions to take in a disaster situation:

1. Determine the location of every traveler.
2. Meet at a designated meeting point as soon as possible.
3. Determine the current physical and psychological condition of affected travelers.
4. Contact local authorities.
5. If the traveler is registered in the ASU Student International Travel Registration System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456.
   If the traveler is an employee and is not registered in the ASU Student International Travel Registration System, please call the 24/7 phone number located on your ASU International Travel Insurance Card.
6. If the traveler is registered in the ASU Student International Travel Registration System, contact On Call International at 603-952-2660 for information on evacuation options, if necessary.
   If the traveler is an employee who is **not** registered in the ASU Student International Travel Registration System, please call the 24/7 phone number located on the ASU International Travel Insurance Card.
7. Notify the nearest U.S. embassy. If calling, ask to speak with Post 1, the Marine on duty.
8. Determine the event's proximity to all travelers.
9. Determine the imminent risk to travelers if they remain where they are.
10. Determine if and for how long adequate and secure housing will be available.
11. Determine if adequate food, water and medical attention are available.
12. Document the following:
    - Advice from the U.S. embassy
    - Availability of food, water, medical attention and housing
    - Curfew imposed by the host country
    - Imminent risks to travelers
    - Travel restrictions imposed by the host country

H. Traveler has been arrested

Actions to take after a traveler has been arrested:

1. Determine the traveler's location.
2. Visit the traveler to ascertain detainee conditions, if possible.
3. Document the following:
    - Agency that made the arrest and filed the charges.
    - Case number if applicable.
    - Description of the charges against the traveler.
    - Description of the traveler's side of the story.
    - Has the student spoken with their family?
    - Is the traveler entitled to a phone call?
    - Names, addresses and phone numbers of arresting authorities.
    - Rights that have been granted to the detainee.
    - Were other ASU travelers involved in the incident?
4. If the traveler is registered in the ASU Student International Travel Registration System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456.
   If the traveler is an employee **not** registered in the ASU Student International Travel Registration System, please call the 24/7 phone number located on the ASU International Travel Insurance Card.
5. Notify the nearest U.S. embassy. If calling, ask to speak with Post 1, the Marine on duty.
6. Contact Overseas Citizen Services at 202-501-4444.
7. Ensure the safety and care of other field research personnel.
8. Request that other field research personnel refrain from discussing the incident on social media until the family is notified.

Assistance for incarcerated U.S. citizens abroad.

I. Traveler has been kidnapped or taken hostage

Actions to take after a traveler has been kidnapped or taken hostage

1. Notify the nearest U.S. embassy. If calling, ask to speak with Post 1, the Marine on duty.
2. Notify appropriate local law enforcement.
3. Document the following:
    - Any contact made by kidnappers.
    - Contact information of local law enforcement officer providing assistance.
    - Details of the contact person at the U.S. embassy, including title and contact number.
    - Negotiation support is available on-site.
    - U.S. embassy advice, including recommended actions.
4. If the traveler is registered in the ASU Student International Travel

Registration System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456. If the traveler is an employee **not** registered in the ASU Student International Travel Registration System, please call the 24/7 phone number located on the ASU International Travel Insurance Card.

5. Ensure the safety and care of other field research personnel.
6. Determine if on-site counseling is available for other field research personnel in addition to the support that ASU Counseling Services or the Employee Assistance Office can provide remotely for students and employees, respectively.
7. Request that other field research personnel refrain from discussing the incident on social media until the victim's family can be notified.

Support for hostages and their families:

- 1-888-284-1010
- Visit the page Hostage US

J. Traveler has died

Actions to take if a traveler dies

1. If the traveler is registered in the ASU Student International Travel Registration System, contact GEO at 480-965-5965 or 24/7 at 480-965-3456. If the traveler is an employee not registered in the ASU Student International Travel Registration System, please call the 24/7 phone number located on the ASU International Travel Insurance Card .
2. Contact the nearest U.S. embassy. If calling, ask to speak with Post 1, the Marine on duty.
3. If the traveler is registered in the ASU Student International Travel Registration System, contact On Call International at 603-952-2660 to begin the process of repatriation of remains and belongings.
4. If the traveler is an employee, the death must be reported to ASU Employee Health at 602-496-1917.
5. Document the following:
    - Current location of the remains.
    - If the embassy of the deceased has been informed.
    - If the next of kin have been contacted.
    - Time, location and manner of the death.
    - Whether an autopsy is required.
6. Meet with all field research personnel, as a group or individually, to ensure their safety and care, following directions from ASU.
7. Request that other field research personnel refrain from discussing the incident on social media until the family can be notified.
8. Determine if on-site counseling is available for other program travelers, in addition to support that ASU Counseling Services or the Employee Assistance Office can provide remotely for students and employees, respectively.

9. Gather the belongings of the deceased traveler for repatriation.
10. Be available 24/7 to ASU and the travelers; expect the follow-up from this to be all-consuming for at least several days after the incident.

Assistance for the death of American citizens abroad.

Appendices
Appendix A — Field Safety Plan

ASU Field Research Safety Plan

This form may be used by the Principal Investigator or Project Lead to assist in developing a safety plan. **The completed safety plan should be shared with all the members of the field research team and kept on file on campus.** A single safety plan can cover multiple trips to the same location. The safety plan should be revised whenever a significant change to the location or scope of fieldwork occurs. EHS is available to assist in completing or reviewing the safety plan: 480-965-1823 or email EHS. Please refer to the Field Research Safety Manual to review ASU policies and procedures, code of conduct, reporting and other materials to assist in the development of the Field Safety Plan.

Principal Investigator:	**Department:**
Phone number:	**Email address:**
Field Team Lead:	**Email address:** **Phone number:**

Dates of travel: List multiple dates if more than one trip is planned

Location of field research:

Country: _____Geographical Site: _____

Nearest city: _____Include name, distance from site

Nearest hospital: _____Include location, distance from site

Local emergency response dispatch number, if applicable, e.g., 911 in the United States and 000 in Australia:

_____

Travel plans: Please list planned methods of travel.

Field research: Please include a brief description of the fieldwork.

University contact: Name: Phone:	**Local field contact:** Name: Phone:
Secondary University contact: Name: Phone:	**Secondary field contact:** Name: Phone:
Emergency procedures: Please include detailed plans for field location, including evacuation and emergency communication; Include a separate sheet if necessary.	
First aid training: Please list any team members who are first aid trained and the type of training they have. Attach training records to the Field Safety Plan on a separate sheet, if necessary.	
Other required trainings: Please list any trainings required by an Institutional Committee, Department or lab-specific trainings. Attach training records to the Field Safety Plan on a separate sheet, if necessary.	
Communications plan: Please describe plans for communication between field members and to or from ASU contacts. Avoid singular points of communication. Regular check-ins are encouraged; please list frequency of communication to be expected and process should no check-in occur.	

Physical demands: Please list any physical demands required for this field research, for example, diving, climbing, temperature extremes and high altitude.

Risk assessment: Please list identified risks associated with the activity or the physical environment, such as extreme heat or cold, wild animals, endemic diseases, firearms, explosives, violence. List appropriate measures to be taken to reduce these risks. Include a separate sheet if necessary.

Identified risk	**Control of risk**
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Travel immunizations: Please list required immunizations or prophylaxis. Contact ASU Employee Health at 602-496-1917 for assistance.

Field team membership Please list the names of all members of the field research team and identify the Field team leader.

Reporting: Please list primary and secondary field personnel for reporting incidents. Please list procedures for reporting to ASU in the case of an emergency or incident.

Appendix B — General physical and environmental hazards

Hazard	Location	Cause	Symptoms	First aid	Prevention
Vehicle accident	Worldwide	• Driver error • Fatigue • Impaired driving • Roadway factors • Vehicle factors	• Various trauma injuries	1. Call 911 2. Secure the scene 3. Do not move victim 4. Check airways, breathing and circulation 5. Treat specific injury	• Don't drive impaired • Don't speed or drive recklessly • Don't use a 12-or-15 passenger van. • Obey traffic laws • Wear your seatbelt
Slips, trip falls	Worldwide	• Improper or lack of, use of ladders • Inattention or distraction • Loose, irregular or slippery surface • Obstruction • Poor lighting • Wrong footwear	• Strains, fractures, bruises and contusions like head, wrist, elbow, shoulder, back, hip, knee, ankle		• Adequate lighting • Don't carry oversized objects • Proper housekeeping • Use ladders properly • Wear proper footwear
Dehydration	Worldwide	Not enough water intake.	• Dizziness • Dry mouth • Flushed face • Headache • Increased thirst • Muscle cramps • Weakness	• Drink plenty of fluids • Minimize caffeinated beverage intake • Take frequent rest breaks	Drink plenty of water, at least 2 quarts per day and more if working strenuously or in a warm climate.

Hazard	Location	Cause	Symptoms	First aid	Prevention
			• Dark urine		
Impure water	Worldwide	Harmful organisms and pathogens living in water sources.	• Gastrointestinal illness • Flu-like symptoms	1. Drink clear liquids that are uncontaminated. 2. Slowly introduce mild foods, e.g., rice, toast, crackers, bananas or applesauce 3. See a doctor if there is no improvement.	• Carry your own water. • Treat water before use with tablets, purifiers or by boiling for > 3 minutes. • Use.
Sunburn	Worldwide	Excessive exposure to the sun.	• Irritated skin, pink or red in color	Apply cool water, aloe or other cooling lotion to affected area.	• Apply SPF ≥ 30 sunblock. • Wear long-sleeved clothing and a hat.
Heat exhaustion	Worldwide — hot climates	Prolonged physical exertion in a hot environment.	• Cool, clammy skin • Excessive thirst • Fatigue • Heavy sweating	Cool the victim, treat for shock and slowly give water or electrolyte replacer.	• Acclimate to heat gradually. • Drink plenty of liquids. • Take frequent rest breaks.
Heat stroke	Worldwide — hot climates	Prolonged physical exertion in a hot environment.	• Bright red warm skin • Exhaustion • Light-headedness	Cool the victim at once, replenish fluids and seek medical attention immediately.	• Acclimate to heat gradually. • Drink plenty of liquids. • Take frequent rest breaks.

Hazard	Location	Cause	Symptoms	First aid	Prevention
Frostbite	Worldwide — cold climates	Exposure to cold temperatures.	• Swelling, itching, burning and deep pain as the skin warms • Waxy, whitish numb skin	Slowly warm the affected areas. Do not rub area and seek medical attention immediately.	• Dress in layers. • Cover your extremities with warm clothing, e.g., hats, facemask, gloves, socks and shoes.
Sandstorms or haboob	Worldwide — Arid climates	Thunderstorm outflow winds.			• Don't enter the dust storm area if you can avoid it. • If dense dust is observed blowing across or approaching a roadway, pull your vehicle off the pavement as far as possible, stop, turn off lights, set the emergency brake, take your foot off of the brake pedal to be sure the taillights are not illuminated. • If you can't pull off the roadway, proceed at speed suitable for visibility, turn on lights and sound horn occasionally. Use the painted center line to help guide you. Look for

Hazard	Location	Cause	Symptoms	First aid	Prevention
					a safe place to pull off the roadway. • Never stop on the traveled portion of the roadway.
Flash flooding, mudslides or landslides	Worldwide	Many factors, e.g., earthquakes, storms, volcanic eruptions, fire and human modification of land.			• Avoid river valleys and low-lying areas during times of danger. • Heed all warnings and evacuation notices. • If near a stream or channel, be alert for any sudden increase or decrease in water flow • If you get stuck in the path of a landslide, move uphill as quickly as possible. • Listen to local news stations for warnings • Never cross a bridge if you see a flow approaching. • Never cross a road with flowing water or mud. or water that changes from clear to muddy. Stay alert and awake during a storm that could cause a landslide.

Hazard	Location	Cause	Symptoms	First aid	Prevention
Hypothermia	Worldwide — cold climates	Prolonged exposure to cold temperatures.	• Excessive fatigue • Numbness • Shivering • Slurred speech	Remove cold, wet clothes, put on dry clothes or use a blanket or skin-to-skin contact, drink warm liquids, seek medical attention immediately.	• Avoid getting damp from perspiration. • Dress in layers. • Wear appropriate clothing.
Carbon monoxide	Worldwide	Running a vehicle or burning a fuel stove in an enclosed space.	• Agitation • Coma • Disorientation • Lethargy • Severe headaches • Stupor	Remove the victim to fresh air immediately and perform CPR if needed	• Ensure that the vehicle's tailpipe is not covered by snow. • Keep areas adequately ventilated when burning fuel.
Extreme weather	Worldwide	Snow squalls, blizzards, heavy rains, lightning, tornadoes, hurricanes.	Severe weather can result in physical injury or death.	Seek shelter immediately.	• Be aware of special weather concerns. • Bring appropriate equipment to deal with severe weather.
High altitude illness	Worldwide — high altitudes	Decreased oxygen intake and increased breathing rate.	• Headache • Nausea • Weakness	Use supplemental oxygen and decrease altitude.	• Allow your body to acclimatize by gaining elevation slowly.

Hazard	Location	Cause	Symptoms	First aid	Prevention
Wildfire	Worldwide	Unplanned fires that burn in natural areas like forests, grasslands or prairies. Spread quickly to other natural areas and communities.			• Evacuate immediately if authorities tell you to do so. • If sick or need medical attention, contact a healthcare provider for further care instructions and shelter in place, if • If trapped, call emergency services and give your location. Turn on lights to help rescuers find you. • Pay attention to emergency alerts and notifications for information and instructions. possible. Use an N95 mask to protect yourself from smoke inhalation or limit your exposure to smoke.

Appendix C — Hazards in North America

Hazard	Location	Cause	Symptoms	First aid	Prevention
Hunting season	U.S.	Local hunting seasons and regulations vary.	A hunting accident may result in serious injury or death.	Seek medical attention for serious injuries or wounds.	• Avoid animal-like behavior, like hiding in thickets. • Wear appropriately colored safety clothing.
Poison plants	North America	Exposure to poison ivy, poison oak or poison sumac plants.	• Itchy rash • Red, swollen skin	Apply a wet compress with baking soda or vinegar or use a topical ointment. Avoid scratching the rash.	• Avoid contact with poison plants. • Use pre-exposure lotion. • Wash clothes and skin with soap and water after exposure.
Armed plants (e.g., Saguaro cactus)	North America	Exposure to sharp spines or splinters.	• Infection • Irritation • Pricks, punctures	1. Remove the largest spines or splinters from the injured area with tweezers. 2. Use sterilized needle to gently lift embedded spines and splinters to the surface for removal with tweezers. 3. Work slowly to prevent injury to tissue. 4. Apply duct tape before washing to remove small spines.	• Avoid contact with armed plants or rough wooden materials that may leave splinters. • Wear appropriate safety clothing to provide a barrier between spines or splinters and skin.

				5. Apply gentle pressure to the area if it is bleeding. 6. Clean area gently with soap and warm water. 7. Apply antiseptic or antibacterial gel. 8. Bandage the injury. 9. Apply ice or cold pack to the area for any swelling.	

Appendix D — International hazards

Hazard	Location	What to do if encountered	Prevention
Violence caused by political unrest or military conflict	International	Leave the area as soon as it is safe to do so.	• Be aware of current travel advisories. See Section VI.
Theft	International	Report theft immediately to local authorities.	• Carry shoulder bag diagonally and keep bag in front under your arm. • Keep wallet in front pocket.

Appendix E — Animals and pests general

Type	Location	Most dangerous Species	What to do if encountered	First aid	Prevention
Mosquitoes	Worldwide – especially wet areas conducive to breeding	Refer to Section V: Diseases		Use topical ointment to relieve itching.	• Don't leave standing pools of water. • Use bed nets. • Use insect repellant.
Rodents	Worldwide		Do not touch a rodent, dead or alive.	Clean wounds thoroughly if bitten or scratched.	• Keep areas clean to avoid attracting rodents. • Store food in sealed containers.
Conenose "kissing" bugs	North and South America	May cause allergies in some people. In Latin America, they sometimes carry a protozoan, Trypanosoma cruzi, which causes Chagas' disease Refer to Section V: Diseases.		1. Use topical ointments to soothe itching. 2. Seek medical attention immediately in case of anaphylactic shock.	• Use caution when working near nests and wood rat dens. • Use extra caution when working near rock shelters.
Sharks	Worldwide — Oceans: U.S., Africa, Central and South America, Australia, Pacific Islands	Great White, Bull, Tiger, Oceanic Whitetip	Call for help, swim towards safety, punch or kick the shark if necessary.	Seek medical attention for serious injuries or wounds.	• Don't enter the water when bleeding. • Don't wear sparkling jewelry. • Never swim alone.

Type	Location	Most dangerous Species	What to do if encountered	First aid	Prevention
Crocodiles and alligators	Worldwide — Tropics and subtropics: North America, Australia, Africa, Eastern China	American Alligator in North America, Estuarine Crocodile in Australia, Nile Crocodile in Africa	Do not provoke an alligator or crocodile.	Seek medical attention for serious injuries or wounds.	• Avoid waters known to be home to crocodiles or alligators. • Keep at least 30 feet away from any crocodile or alligator.

Appendix F — Animals and pests North America

Type	Location	Most dangerous species	What to do if encountered	First aid	Prevention
Bears	North America	Black Bear in North America, Grizzly Bear in Alaska, Western Canada and Pacific Northwest, Polar Bear in the Arctic	1. Do not run. 2. Move slowly and speak in a low soft voice. 3. If attacked, lay in the fetal position and protect the head. 4. Play dead.	Seek medical attention immediately for serious injuries or wounds.	• Keep food out of sleeping areas. • Never approach a bear or bear cub. • Stay away from the bear's food supply. • Wear a bell or other noisemaker.
Mountain lions	North, Central and South America	All	1. Do not run, back away slowly, do not corner it. 2. Do not play dead; look it in the eyes. 3. Make yourself look larger with arms overhead, do not bend down. 4. Use a loud voice. 5. Throw sticks or rocks. 6. Fight back, poke it in the eye with your thumb.	Seek medical attention immediately for serious injuries or wounds.	• Always look up and behind you. • Avoid hiking, biking, jogging alone or other outdoor activities when mountain lions are most active, dawn, dusk and at night. • Avoid walking near dense growth, rock outcroppings, ledges. • Carry pepper spray. • Do not feed deer. • Do not leave children or pets unattended.

Type	Location	Most dangerous species	What to do if encountered	First aid	Prevention
			7. Protect your neck and head.		
Snakes	North America, Mexico	Rattlesnakes, Cottonmouths, Coral Snakes, Moccasins and Copperheads	• Avoid locations where snakes may be. • Do not pick up, disturb or corner it. • Move away from the snake.	1. Let the wound bleed freely for 30 seconds. 2. Apply a cold pack. 3. Keep area immobilized at heart level. 4. Seek medical attention immediately. Alert ahead if possible.	• Use a stick to disturb the brush in front of you. • Walk in open areas. • Wear heavy boots.
Spiders	North America	Black Widow and Brown Recluse	• Avoid locations where spiders may be, such as dark places. • Do not pick up or disturb a spider.	1. Clean wound. 2. Apply a cold pack. 3. Keep area immobilized at heart level. 4. Seek medical attention immediately. Alert ahead if possible.	• Shake out clothing and bedding before use. • Use care around rock piles, logs, bark, gardens, outdoor privies, old buildings. • Wear gloves when working outside.
Scorpions	North America — especially Arizona, Southeast	All	• Avoid locations where scorpions may be. • Do not pick up or disturb a scorpion.	1. Clean wound. 2. Apply a cold pack.	• Avoid lumber piles and old tree stumps. • Shake out clothing and bedding before use.

Type	Location	Most dangerous species	What to do if encountered	First aid	Prevention
	California, Utah and Mexico			3. Keep area immobilized at heart level. 4. If needed, use painkiller or antihistamine. 5. Seek medical attention if no signs of improvement.	• Wear gloves when working outside.
Bees, wasps, etc.	North America	Bees, wasps, hornets and yellowjackets, Africanized Killer Bees in Southeast U.S.	1. Avoid wearing bright colors, flower prints and perfume. 2. Move slowly or stand still. Don't swat at insects.	1. Remove the stinger. 2. Apply a cold pack. 3. Keep area immobilized at heart level. 4. If needed use painkiller or antihistamine.	• Bring medication if you have an allergy, as the sting may be fatal. • Keep scented foods, drinks and meats covered. • Wear shoes outside.
Fleas and ticks	North America	Refer to Section V: Diseases	• Avoid shrubbery. • Stay on widest part of path.	1. Remove the flea or tick with tissue or tweezers. 2. Clean wound with antiseptic. 3. Pay attention for signs of illness. See Section V: Diseases and seek medical	• Drag cloth across the campsite to check for fleas or ticks. • Protect pets. • Tuck pants into boots. • Wear insect repellent. • Wear long clothing with tightly woven material.

Appendix G - Animals and pests international

Type	Location	Most dangerous species	What to do if encountered	First aid	Prevention
Bears	Worldwide: Arctic, South America, Asia	Polar Bears in Greenland and North Russia, Spectacled Bears in North and West South America, Asiatic Black Bears in South and East Asia	1. Do not run. 2. Move slowly and speak in a low soft voice. 3. If attacked, lay in the fetal position and protect the head. 4. Play dead.	Seek medical attention immediately for serious injuries or wounds	• Keep your camp area free of garbage and food waste. • Never feed or approach a bear, especially a cub. • Stay away from the bear's food.
Lions	Africa and Asia	All	1. Do not startle. 2. Do not run. 3. Do not look it in the eye. 4. Make yourself look larger.	Seek medical attention immediately for serious injuries or wounds	• Do not camp in areas frequented by lions. • Do not provoke. • Do not sleep outside. • Stay inside the vehicle if traveling near lions.
Other large land dwellers	Africa, Asia	Hippos, African Elephant, Rhinos and Buffalo in Africa; Asian Elephants and Bengal Tigers in Southeast Asia; Siberian Tigers in North and East Asia	Do not startle.	Seek medical attention immediately for serious injuries or wounds	• Do not camp near areas frequented by large animals. • Do not provoke. • Keep a lookout in open spaces. • Stay inside the vehicle if traveling near large animals.

Water dwellers	Worldwide — especially in Australia	Blue Ringed Octopus, Box Jellyfish and Irukandji Jellyfish in Australia; Stonefish located worldwide	Never touch an unidentified octopus or jellyfish	1. Jellyfish or Octopus sting use vinegar on wound. 2. Stonefish sting rinse with warm water. 3. Seek medical attention.	• Avoid going in waters known to be inhabited by jellyfish and octopuses. • Wear sandals in the water to avoid stepping on a stonefish.
Snakes	Worldwide	Russel's Viper, Indian Cobra in India; Tiger, Black, Brown, Sea Snakes in Australia; Egyptian Cobra, Puff Adder, Saw Scaled Viper in Africa; Fer-de-lance in Central and South America	• Do not pick up, disturb or corner a snake. • Move away from the snake.	1. Let the wound bleed freely for 30 seconds. 2. Apply a cold pack. 3. Keep area immobilized at heart level. 4. Bring victim to 5. hospital and alert ahead if possible.	• Use a stick to disturb the brush in front of you. • Walk in open areas. • Wear heavy boots.
Spiders	Worldwide	Funnel Web and Redback Spiders in Australia; Brazilian Wandering Spider, Brown Recluse and Tarantula in South America	• Avoid locations where spiders might be, such as dark places. • Do not pick up or disturb a spider.	1. Clean wound. 2. Apply a cold pack. 3. Keep area immobilized at heart level. 4. Bring victim to hospital and alert ahead if possible. 5. Kill spider for a 6. positive ID.	• Shake out clothing and bedding before use. • Use care around rock piles, logs, bark, outdoor privies and old buildings. • Wear gloves when working outside. • Wear shoes outside.

Scorpions	Worldwide — especially North Africa, The Middle East, South America and India	All	• Avoid locations where scorpions may be. • Do not pick up or disturb a scorpion.	1. Clean wound. 2. Apply a cold pack. 3. Keep area immobilized at heart level. 4. Use painkiller or antihistamine if desired. 5. Seek medical attention if no improvement.	• Avoid lumber piles and old tree stumps. • Shake out clothing and bedding before use. • Wear gloves when working outside.

Appendix H — Diseases general

Type	Location	Exposure route	Symptoms	First aid	Prevention
Campylobacteriosis	Worldwide	Foodborne — poultry products, unpasteurized milk or water contaminated with Campylobacter.	• Diarrhea • Fever • Gastrointestinal symptoms	• Drink plenty of fluids. • Seek medical attention if symptoms persist.	• Always cook food thoroughly. • Do not drink unpasteurized milk. • Never drink water from an impure source. • Wash hands with soap and water frequently.
Cholera	Africa, Asia, Latin America	Foodborne — food and water contaminated with Vibrio cholerae.	• Diarrhea • Gastrointestinal symptoms	• Drink plenty of fluids. • Seek medical attention if symptoms persist.	• Always cook food thoroughly. • Never drink water from an impure source. Wash hands with soap and water frequently.
E. coli O157:H7 and Shiga toxin-producing E. coli Gastroenteritis	Worldwide	Foodborne — beef, unpasteurized milk, unwashed raw vegetables, water contaminated with Escherichia coli.	• Diarrhea • Gastrointestinal symptoms	• Drink plenty of fluids. • Seek medical attention if symptoms persist.	• Always cook food thoroughly. • Never drink water from an impure source. • Wash hands with soap and water frequently. • Wash vegetables before consuming.

Type	Location	Exposure route	Symptoms	First aid	Prevention
Hepatitis A — vaccine available	Worldwide in under-developed countries	Foodborne — water, shellfish, unwashed raw vegetables contaminated with Hepatitis A virus	• Diarrhea • Gastrointestinal symptoms	• Drink plenty of fluids from bottled or purified water — not local water. • Seek medical attention if symptoms persist.	• Always cook food thoroughly. • Never drink water from an impure source. • Obtain a vaccine. soap and water frequently. • Wash hands with Wash vegetables before consuming.
Histoplasmosis	Worldwide — especially Mississippi and Ohio River Valleys	Inhalation of fungus Histoplasma capsulatum from soil contaminated with bat or bird droppings.	• Mild, flu-like • Rarely can be acute pulmonary histoplasmosis	• See a doctor if you suspect. histoplasmosis • Typically clears up in three weeks.	equipment may be needed. • Personal protective Use caution when disturbing dry soils or working near bat or bird droppings.
Human Immuno-deficiency virus or Acquired Immune Deficiency Syndrome — HIV or AIDS	Worldwide	• Being exposed to blood or body fluids infected with HIV. • Having sex or sharing needles with someone infected with HIV.	• Attacks the immune system, may eventually result in opportunistic infections or cancers. • May have flu-like symptoms 14–60 days post-infection.	• Blood test for diagnosis. • Treatment with antiretroviral drugs for long-term maintenance.	• Do not engage in risky activities. • Follow Bloodborne Pathogen training when handling any unfixed human blood or tissue.
Influenza — seasonal	Worldwide	• Inhalation of influenza virus.	• Fever • Headache	1. Flu antiviral drugs can treat the flu	• Annual flu vaccination.

Type	Location	Exposure route	Symptoms	First aid	Prevention
	Note: As of 2008, pandemic strains of non-seasonal influenza have been reported in Africa, Asia, Europe, Near East and occur primarily in birds	• Contact with birds infected with influenza.	• Dry cough • Extreme tiredness • Muscle aches • Runny or stuffy nose • Sore throat • Stomach symptoms like nausea, vomiting and diarrhea are more common in children	or prevent infection. 2. Your health care professional will decide whether you should take antiviral drugs. 3. Antiviral drugs should be started within 48 hours of getting sick. 4. Antiviral drugs are 70–90% effective in preventing infection.	• Cover your nose and mouth with a tissue or elbow when you cough or sneeze. • If you are not near water, use an alcohol-based hand cleaner. • If you get the flu, • Stay away from people who are sick. stay home from work or school. • Try not to touch your eyes, nose or mouth. Wash hands with soap and water frequently.
Leptospirosis	Worldwide	Ingestion, swimming or other activities in water contaminated with Leptospira.	• Flu-like • Occasionally more serious symptoms	• See a doctor if you suspect leptospirosis.	• Avoid entering the water with open wounds. • Use care when working in the water, especially after a flooding event.
Norovirus “Norwalk-like viruses” Gastroenteritis	Worldwide	• Foodborne — food, water, surfaces or objects contaminated with Norovirus.	• Nausea, vomiting, diarrhea, stomach cramping • Some people also have a low-grade fever, chills,	Stay hydrated	• Wash fruits or vegetables and steam oysters. • Wash hands with soap and water frequently.

Type	Location	Exposure route	Symptoms	First aid	Prevention
		• Direct contact with another person who is infected.	headache, muscle aches, malaise		• Clean and disinfect contaminated surfaces immediately after illness using a bleach-based cleaner. • Remove and wash contaminated clothing or linens.
Plague	Worldwide	• Flea-borne — from rodents infected with Yersinia pestis to humans. • Direct contact with infected tissues or fluids from sick or dead animals.	• Flu-like • Non-specific. • Swollen and painful lymph nodes — bubonic	See a doctor if you suspect plague.	• Use care when working in areas where plague is found. • Use caution when working with wild rodents.
Rabies — Vaccine available	Worldwide	• Bat bites are difficult to see and may not be felt. Exposure is also possible when a bat is found in living or sleeping quarters. • Infection from the bite of an animal like raccoons, skunks, bats, foxes, coyotes, dogs, cats infected with Lyssavirus.	• Fatal within days of the onset of symptoms without immediate treatment • Early symptoms: fever, headache, malaise • Later symptoms: insomnia, anxiety, confusion, paralysis, hallucinations,	Disinfect and wash the wound. See a doctor **immediately** if potentially exposed to a rabies-carrying species like a bat or carnivore.	• Obtain a vaccine if you will be working with bats or carnivores. • Use extreme caution handling these animals. • Vaccinate pets.

Type	Location	Exposure route	Symptoms	First aid	Prevention
			hypersalivation, difficulty swallowing, fear of water		
Salmonellosis	Worldwide	Foodborne: beef, poultry, milk, eggs, unwashed raw vegetables contaminated with salmonella bacteria	• Diarrhea • Gastrointestinal symptoms	• Drink plenty of fluids. • Seek medical attention if symptoms persist.	• Always cook food thoroughly. • Wash vegetables before consuming. • Wash hands with soap and water frequently.
Typhoid Fever —Vaccine available	Worldwide	Foodborne: food and water contaminated with Salmonella typhi.	• Diarrhea • Gastrointestinal symptoms	• Drink plenty of fluids. • Seek medical attention if symptoms persist.	• Obtain a vaccine. • Always cook food thoroughly. • Never drink water from an impure source. • Wash hands with soap and water frequently.
Tetanus — Vaccine available	Worldwide	A wound that is infected with Clostridium tetani; tetanus toxin is produced by the bacteria and attacks nerves.	• Early symptoms: lockjaw, stiffness in the neck and abdomen, difficulty swallowing • Later symptoms: muscle spasms, seizures, nervous system disorders	• See a doctor for any wound contaminated with dirt, feces, soil or saliva; for puncture wounds; and for wounds resulting from crushing, burns and frostbite.	• Obtain a vaccine for tetanus every 10 years or immediately following a suspect wound or injury. • Once the disease starts, it must run its course.

Type	Location	Exposure route	Symptoms	First aid	Prevention
Typhus Fever	Worldwide	Infection from the bite of lice, fleas, ticks or mites infected with Rickettsiae species.	• Headache • Fever • Rash	• See a doctor if you suspect Typhus Fever. • Treatable with antibiotics.	• Use insect repellant. • Wear long-sleeve shirts. • Tuck pants into boots.

Appendix I — Diseases North America

Type	Location	Exposure route	Symptoms	First aid	Prevention
Coccidiodo-mycosis — valley fever	North and South America semiarid regions	Coccidioides species fungus is inhaled when soil is disturbed.	• Flu-like: fever, cough, rash, headache, muscle aches • None in most people ~60% • Occasionally, chronic pulmonary infection or widespread disseminated infection like skin lesions, central nervous system infection and bone and joint infection	See a doctor if you suspect Valley Fever.	• If you are immuno-compromised, wear a mask when digging. • Keep doors and windows tightly closed. • Stay inside during dust storms in areas where Coccidioides fungus is present. • Wet soil before digging.
St. Louis Encephalitis	North and South America	• Mosquito-borne: infection from the bite of a mosquito infected with St. Louis Encephalitis virus.	• Mild: fever and headache • Severe: headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis and rarely death	Seek medical attention immediately if you suspect encephalitis.	• Avoid areas of standing water where mosquitoes breed. • Use insect repellent. • Many mosquitoes are most active at dusk and dawn; consider staying indoors during these hours. • Wear long sleeves and pants.

Type	Location	Exposure route	Symptoms	First aid	Prevention
Lyme Disease	U.S., Europe and Asia	Infection through the bite of a tick infected with: • Borrelia burgdorferi — U.S. • Borrelia afzelii or Borrelia garinii — Europe.	• Early symptoms: flu-like • Later symptoms: arthritis and neurologic problems • Spreading rash or "bullseye."	See a doctor if you suspect Lyme Disease.	• Avoid tick-infested areas. • Check clothing and hair for ticks and remove any ticks. • Use insect repellant. • Wear long sleeves and pants.
Rocky Mountain Spotted Fever	U.S., southern Canada, Mexico and Central America	Infection through the bite of an infected tick — Rickettsia rickettsii	• Headache • Muscle pain • Spotty rash • Sudden onset of fever	See a doctor if you suspect Rocky Mountain Spotted Fever.	• Avoid tick-infested areas. • Check clothing and hair for ticks and remove any ticks. • Use a repellant. • Wear long pants, shirts.
Hantavirus Pulmonary Syndrome — Sin Nombre Virus	North America	Inhalation of dusts or aerosols from the infected rodent's feces, urine or saliva. Vector: Deer mouse — Peromyscus maniculatus.	• Early — 1–5 weeks: fatigue, fever, muscle aches, chills, headaches, dizziness, sometimes abdominal problems • Late — 4–10 days after early	Seek medical attention **immediately** if you suspect HPS. The likelihood of survival is greatly increased with early diagnosis and treatment.	• Avoid contact with rodents, especially their feces. • See section on dealing with rodent-infested areas.

Type	Location	Exposure route	Symptoms	First aid	Prevention
			symptoms: coughing, shortness of breath		
Arenavirus — White Water Arroyo	North America	Inhalation of dusts or aerosols from the infected rodent's feces, urine or saliva. • Vector: Woodrats — Neotoma fuscipe — and other Neotoma species.	• Fever • Headache • Muscle aches • Severe respiratory distress — occasionally	Seek medical attention **immediately** if you suspect WWA. The likelihood of survival is greatly increased with early diagnosis and treatment.	• Avoid contact with rodents, especially their feces. • See section on dealing with rodent-infested areas.
West Nile Virus	North America	• Mosquito-borne Infection from the bite of a mosquito infected with West Nile Virus. • Handling infected birds.	• Mild: fever, headache, body aches, nausea, vomiting and sometimes swollen glands or a rash on the chest, stomach and back • None in most people ~80% • Severe: high fever, neck stiffness, stupor, muscle weakness, disorientation, coma, tremors,	See a doctor if you suspect that severe symptoms are due to West Nile Virus.	• Avoid areas of standing water where mosquitoes breed. • Don't handle dead birds with your bare hands. • Many mosquitoes are most active at dusk and dawn; consider staying indoors during these hours. • Use insect repellent. Wear long sleeves and pants.

Type	Location	Exposure route	Symptoms	First aid	Prevention
			convulsions, vision loss, numbness, paralysis		

Appendix J — Diseases International

Type	Location	Exposure route	Symptoms	First aid	Prevention
Dengue Fever	Africa, Southeast Asia, China, India, Middle East, South and Central America, Australia and the Pacific Islands	Mosquito-borne infection from the bite of a mosquito infected with one of four dengue viruses.	• Flu-like • Nausea and vomiting • Pain behind eyes • Rash • Severe headache • Sudden, high fever	• See a healthcare provider if you suspect Dengue Fever. • Takes up to one month to recover.	• Use a mosquito net. • Use insect repellent. • Wear long sleeves and pants.

Chikungunya virus	Africa, Asia, Europe and the Indian and Pacific Oceans, Caribbean	Mosquito-borne infection from the bite of a mosquito infected Chikungunya virus.	• Fever
			• Headache
			• Joint pain
			• Joint swelling
			• Muscle pain
			• Rash
				• See a healthcare provider.
				• Treat symptoms:
				  ○ Hydrate.
				  ○ Rest.
				  ○ Take acetaminophen or paracetamol to reduce fever and pain.
					• Use a mosquito net.
					• Use insect repellent.
					• Wear long sleeves and pants.

Lyme Disease	U.S., Europe and Asia	Infection through the bite of a tick-infected with	• Early symptoms: flu-like	See a doctor if you suspect Lyme Disease	• Avoid tick-infested areas. • Check clothing and hair for ticks and remove any ticks.

Type	Location	Exposure route	Symptoms	First aid	Prevention
		• Borrelia afzelii or Borrelia garinii — Europe. • Borrelia burgdorferi — U.S.	• Later symptoms: arthritis and neurologic problems • Spreading rash or “bullseye”		• Use insect repellant. • Wear long sleeves and pants.
Ebola	Outbreaks occur primarily on the African continent.	Direct contact with an infected animal, like a bat or nonhuman primate or a sick or dead person infected with Ebola virus.	• Aches and pains. bruising • Fever • Gastro-intestinal symptoms, including abdominal pain, diarrhea and vomiting • Hiccups • Joint pain • Loss of appetite • Muscle pain • Red eyes • Severe headache • Skin rash • Sore throat	See a doctor **immediately** if you have traveled in an Ebola-risk area and suspect Ebola.	• Avoid contact with bats, forest antelopes and nonhuman primate blood, fluids or raw meat prepared from these or unknown animals, called bushmeat. • Avoid contact with blood and body fluids of people who are sick. • Avoid contact with items that may have come in contact with an infected person’s blood or body fluids. • Avoid contact with semen from a man who has recovered from Ebola virus disease until testing

Type	Location	Exposure route	Symptoms	First aid	Prevention
			• Unexplained hemorrhaging, bleeding or • Weakness and fatigue		• shows that the virus is gone from his semen. • Avoid funeral or burial practices that involve touching the body of someone who died from Ebola virus disease or suspected Ebola virus disease. • FDA-approved vaccine available.
Marburg virus disease	Africa	• Infected bat feces or aerosols. • Person-to-person contact with those who are infected. • Direct contact with: ○ Blood or body fluids. ○ Contact with infected non-human primates or their body fluids.	• Abdominal pain • Chest pain • Chills • Delirium • Diarrhea • Fever • Headache • Incubation: 2–21 days • Inflammation of the pancreas • Jaundice • Liver failure • Massive hemorrhaging • Multi-organ	See a doctor **immediately** if you have traveled in a Marburg-risk area and suspect Marburg.	○ Avoid fruit bats and sick non-human primates. ○ Prevent direct physical contact with someone suspected or confirmed to have Marburg virus disease by using: o Protective gowns. ○ Gloves. ○ Masks.

Type	Location	Exposure route	Symptoms	First aid	Prevention
		○ Objects with body fluids from a sick person with or has died from Marburg virus disease. ○ Semen from a man who recovered from Marburg virus disease.	dysfunction. • Myalgia • Nausea • Rash on the trunk • Severe weight loss • Shock • Sore throat • Sudden onset of symptoms • Vomiting		
Malaria — preventable with drugs	Central and South America, Hispaniola, Africa, India, South Asia, Southeast Asia, the Middle East and Oceania	• Blood transfusion. • Contaminated needles and syringes. • Mosquito-borne infection from the bite of an infective female Anopheles mosquito.	• Flu-like, fever, sweats, chills, headache, malaise, muscle aches, nausea, vomiting, jaundice • May take 10 days to one year for symptoms to appear	See a doctor **immediately** if you have traveled in a malaria-risk area and suspect malaria.	• Use a mosquito net and insect repellent. • Wear long sleeves and pants. • Take antimalarial drugs; visit your health care provider 4–6 weeks before travel.

Type	Location	Exposure route	Symptoms	First aid	Prevention
			• Untreated may cause severe complications, including death		
Severe Acute Respiratory Syndrome — SARS	Occurred in 2003 in North America, South America, Europe and Asia	• Close person-to-person contact. • Inhalation of respiratory droplets produced when an infected person coughs or sneezes. • Touching surface or object contaminated with infectious droplets and then touching mouth, nose or eyes.	• 10–20% have diarrhea • After two–to–seven days, may develop a dry cough. Begins with a high fever >100.4°F or 38.0°C • Headache • Malaise • Most develop pneumonia • Some have mild respiratory symptoms at the outset		• Travelers to China should avoid live food markets and contact with civets and other wildlife — no evidence that direct contact with civets has led to cases of SARS; similar viruses have been found in these animals. • Wash your hands with soap and water frequently or an alcohol-based hand rub.
Yellow fever — vaccine available	South America and Africa	Mosquito-borne infection from the bite of a mosquito infected with Yellow fever virus.	• Can be fatal • Flu-like • Jaundice	See a doctor if you suspect Yellow Fever.	• Use a mosquito net. • Use insect repellant. • Visit a doctor at least 10 days before travel for the vaccine

Type	Location	Exposure route	Symptoms	First aid	Prevention
					• Wear long-sleeve shirts and pants.
Zika virus	South America, Central America, North America, Africa, Asia, Oceania	• From a pregnant woman to her fetus. • Mosquito-borne infection from the bite of a mosquito infected with Zika virus. • Sexually transmitted from an infected person.	• Fever • Headache • Joint pain • Muscle pain • Rash • Red eyes	See a healthcare provider if you suspect Zika virus infection: • Do not take aspirin or other non-steroidal anti- • Hydrate. inflammatory drugs. • Rest. • Take medicines like acetaminophen to reduce fever and pain.	• Prevent sexual transmission of Zika by using condoms or not having sex. • Use a mosquito net. • Use insect repellant. • Wear long-sleeve shirts and pants.
Hantavirus — Sin Nombre virus and Arenavirus — white water arroyo	Central and South America and Asia	• Inhalation of dusts or aerosols from the infected rodent's feces, urine or saliva. • Vector: Rodents, especially Neotoma and	• Fever • Headache • Muscle aches • Severe respiratory distress, occasionally	Seek medical attention **immediately** if you suspect hantavirus or arenavirus. The likelihood of survival is greatly increased with early diagnosis and treatment.	• Avoid contact with rodents, especially their feces. • See section on proper rodent handling for cleaning a rodent-infested area.

Type	Location	Exposure route	Symptoms	First aid	Prevention
		Peromyscus species.			
Schistoso-miasis or bilharzias	Brazil, Egypt, sub-Saharan Africa, southern China, the Philippines and Southeast Asia	Transmitted by swimming in contaminated freshwater.	• Acute: 2-3 weeks — fever, weight loss, weakness, cough, headaches, abdominal, joint and muscle pain, diarrhea, nausea • Can be asymptomatic • Chronic disease in lungs, liver, intestines, bladder	See a doctor if you suspect schistomiasis.	• Avoid freshwater wading or swimming in endemic regions. • Heat bathwater to over 50°C for at least five minutes before use.

Other vector-borne diseases: Many other diseases may pose a problem when traveling out of the country. Always check with a physician to learn the specific threats to your study location. Some other vector-borne diseases include:

- **African Sleeping Sickness**: Carried by the tsetse fly in Africa.
- **Chagas Disease**: Transmitted by the triatomine bugs — a.k.a., conenose or “kissing” bug — in Mexico and Central and South America.
- **Encephalitis**: Carried by mosquitoes in Asia and Eastern Russia.
- **Filariasis**: Carried by mosquitoes in the tropics.
- **Leishmaniasis**: Transmitted by sandflies in the tropics and subtropics.
- **Onchocerciasis**: Causes ‘river blindness’ and is carried by black flies in Africa, Arabia and Central and South America.

Other diseases: There are other diseases to be aware of when traveling outside of the U.S. While the risk of infection is generally low, it is important to be aware of and take appropriate precautions to guard against diseases such as Tuberculosis, Viral Hemorrhagic Fevers, etc. Always check with your health care provider to learn more about specific diseases in the region you will be conducting your research.

Appendix K — Field research kit items

Basic items	Remote items
ASU Contact info (translated into local languages)	2-way radio or battery-operated radio
Bandages	Antacids
Batteries	Antibiotic cream
Cell phone and charger	Anti-diarrhea medication
Cold or heat packs	Antifungal cream
Extra water	Antiseptic
First aid kit	Antiviral drugs — prescription needed
Flares	Bed nets
Flashlight	Epi pen — prescription needed
Fluorescent Distress flag	Eye, ear or nose drops
Food, snacks	Foreign travel insurance card
Insect repellant	Hydrogen peroxide
Lightweight emergency blanket	Inflatable raft
Map, compass, GPS	Jumper cables, tire gauge, spare tire, jack, tow rope, air pump
Masks	Knife or multitool
Nitrile or other protective gloves	Laxatives
Soap	Lip balm
Sunscreen, hats, sunglasses	Painkillers or antihistamines
Super glue	Pepper spray
Thermometer	Rubbing alcohol
Tweezers	Satellite phone
	Sealed container for food storage
	Seasickness tablets
	Signal mirror
	Tarps, hammer, duct tape, nails
	Tools — shovel, axe or saw
	Waterproof matches
	Whistle or noisemaker

Appendix L — Field safety research risk matrix

Field safety research: Risk matrix					
Risk level	PPE recommendations based on activity and level of risk — lowest = 1; highest = 12				
	Activity	Condition	PPE	Safe work practice	Routes of exposure
1	Handling seemingly healthy live animals.	No substantial local zoonotic disease concerns or vectors; risk from casual contact is minimal.	• Clothing appropriate to the nature of the operation • Disposable or leather gloves	Does not apply	Contact, vector
2	Handling biological samples from apparently healthy live animals.	No substantial local zoonotic disease concerns or vectors.	• Clothing appropriate to the nature of the operation • Disposable or leather gloves • Eye protection	Does not apply	Contact with body fluids or biological samples may increase risk. Contact, vector

3	Collection of biological samples like feces, urine and fetuses from the environment for management or research where no known zoonotic enzootic disease occurs.	Risk exists from contact with body fluids and tissues, but no known disease risk is present.	• Coveralls, lab coat or dedicated clothing • Disposable or leather gloves • Eye protection if splashes may occur	Store Samples in approved and dedicated specimen storage locations according to protocols.	Contact, vector
4	Handling for disposal or submission of single animal found dead in an area with no substantial local zoonotic disease or vectors.	Risk is minimal if a barrier is used. Risk may increase with the size of the animal handled because of increased chance of contamination.	<u>Small animal:</u> • Gloves or inverted bag <u>Large animal:</u> • Coveralls, lab coat or dedicated clothing • Disposable or leather gloves	• Bag carcass tightly if it must be placed in a passenger compartment or to avoid leakage of body fluids into the environment. • Cover all carcasses. • Transport outside passenger area of vehicle — truck bed or trunk. • Use appropriate precautions for transmission routes of diseases of concern.	Contact, vector

5	Handling multiple animals found dead for disposal or submission in an area without substantial zoonotic disease risk or handling single animal or multiple animals in an area with substantial zoonotic disease risk.	Risk may differ if the mortality event is recurring. For example, juvenile birds washed ashore as opposed to unexpected.	Small animal: • Gloves or inverted bag Large animal: • As appropriate to disease: respiratory protection as appropriate to the • Coveralls, lab coat or dedicated clothing • Disposable or leather gloves • Eye protection. level of risk	Follow work practices in number 4. In addition: • Become familiar with human disease symptoms and seek medical attention if symptoms occur. Inform health care provider of occupation and potential exposure. • In an unexpected mortality event: submit 1–5 animals for diagnostic evaluation and dispose of remaining carcasses in a landfill or other approved means. • Inform colleagues and consult with wildlife disease professionals for potential causes of illness. • Store samples in approved locations.	Contact, vector Aerosol, in rare circumstances
6	Briefly handling or contacting live or dead animals incidental to other work assignments.	Incidental exposure as a result of other indoor or outdoor duties.	Small animal: • Gloves or inverted bag Large animal: • Coveralls, lab coat or dedicated clothing • Disposable or leather gloves	• Bag carcass tightly if it must be placed in a passenger compartment to avoid leakage of body fluids into the environment. • Cover all carcasses. • Inform colleagues as appropriate. • Transport outside passenger area of vehicle — truck bed or trunk).	Contact, vector

7	Handling seemingly healthy live animals or samples, from areas with known zoonotic disease risks.	Disease exists in or spills into, handled species or associated vectors. For example, plague, rabies, brucellosis.	• As appropriate to disease, respiratory protection. • Coveralls, lab coat or dedicated clothing • Disposable or leather gloves • Eye protection. level of risk	• Become familiar with human disease symptoms and seek medical attention if symptoms occur. Inform health care provider of occupation and potential exposure. • Use appropriate precautions for transmission routes of diseases of concern.	Contact, vector Aerosol
8	Handling sick or injured live animals for euthanasia, sampling or transportation.	Risk increases because animal movement may increase contact; illness may be zoonotic and increase sources of contaminants. For example, diarrhea.	• As appropriate to disease, respiratory protection. • Coveralls, lab coat or dedicated clothing • Disposable or leather gloves • Eye protection. level of risk. Shoe covers or boots that can be disinfected	• Submit diagnostic samples from sick animals. • Use appropriate precautions for transmission routes of diseases of concern.	Contact, vector Aerosol

9	Handling healthy-appearing animals collected for management or research or found dead with no known zoonotic disease risk for necropsy, dissection or food processing.	Risk is increased because of closer contact with body fluids and tissues, but no reason to suspect high-risk zoonotic pathogens.	• As appropriate to disease: respiratory protection as appropriate to the level of risk • Coveralls, lab coat or dedicated clothing • Disposable or leather gloves • If performing necropsy, dissection or food processing: Eye protection • Shoe covers or boots that can be disinfected	If an animal has received any drugs (anesthetics, euthanasia agent), it is unfit for human consumption and must be removed or withheld from the human food chain.	Contact, vector Aerosol

10	Collection of biological samples — feces, urine, fetuses — from the environment for management or research where zoonotic disease vectors occur.	Risk from contact with body fluids and tissues from potentially infected animals or their parasites.	• As appropriate to disease: respiratory protection as appropriate to the level of risk • Coveralls, lab coat or dedicated clothing • Disposable or leather gloves • Eye protection. Shoe covers or boots that can be disinfected	Use appropriate precautions for transmission routes of diseases of concern. In addition: • Become familiar with human disease symptoms and seek medical attention if symptoms occur. Inform health care provider of occupation and potential exposure. • Inform colleagues and consult with a wildlife disease professional for potential causes of illness.	Contact, vector Aerosol
11	Handling dead animal that was observed ill or a species with known zoonotic disease risk. For example, prairie dog, ground squirrel for necropsy or dissection.	Risk is increased because of closer contact with body fluids and tissues and unknown cause of death.	• Coveralls, lab coat or dedicated clothing • Disposable or leather gloves • Eye protection • Respiratory protection as appropriate to the level of risk • Shoe covers or boots that can be disinfected	• Become familiar with human disease symptoms and seek medical attention if symptoms occur. Inform health care provider of occupation and potential exposure. • Become familiar with warning signs for unusual mortality events: multiple dead animals, blood coming from orifices — nose, rectum — without signs of trauma, animals displaying neurologic signs before death. • Inform colleagues and consult with wildlife health disease professionals for potential causes of illness.	Contact, vector Aerosol

12	Cleaning areas of animal excreta and handling rodents in traps in indoor or field locations with significant accumulation of organic matter.	Large quantities of mouse excreta and bird or bat guano are of considerable concern, especially in indoor settings.	• Coveralls, lab coat or dedicated clothing • Disposable or leather gloves • Eye protection. • Respiratory protection as appropriate to the level of risk • Shoe covers or boots that can be disinfected	See precautions for workers frequently exposed to rodents in Hantavirus Pulmonary Syndrome — U.S.: Updated Recommendations for risk reduction.	Contact, vector Aerosol

Modified from U.S. Geological Survey manual "Safe Work Practices for Working with Wildlife." Contact EHS Biosafety with questions regarding risk levels and for up-to-date information about known zoonotic risks where research will be performed.

Chapter VII — Resources

There are many resources available that may provide more in-depth information regarding your field research environment. Please use the references in this section for further information on many of the topics discussed in this booklet.

A. General

Please see these general resources:

i. Off-campus

- First aid or CPR Training: First aid and CPR training are available from several locations, including Environmental Health and Safety. Contact EHS at 480-965-1823. Many other companies also offer CPR and First aid training.
- **General**: The Centers for Disease Control and Prevention provides information on many topics related to travel, both domestic and international.
- **Impure water**: For more information about waterborne diseases, you may find it on the CDC page for Health water.
- **Medical**: Information about a variety of diseases and illnesses, including dehydration, carbon monoxide poisoning, sunburn, excessive heat, hypothermia and high-altitude sicknesses, can be found online on the page for Centers for Disease Control and Prevention.
- **Local considerations**: The CDC provides information for traveling to locations where environmental toxins such as methanol may be contained or where alcoholic beverages or risk of carbon monoxide poising exists.
- FThe Arizona Department of Health Services Office of Infectious Disease Services offers information about infectious diseases by calling 602-364-4562.
- The Maricopa County Health Department offers information on infectious diseases and immunizations by calling 602-506-6900.

Weather: More information on extreme weather and how to protect yourself can be found from the National Weather Service.

ii. On campus

- ASU Employee Health. Employee Health is available for travel exams and health-related information for employees. Contact: 602-496-1917.
- ASU Health Services: AHS is available for travel exams and other health-related information for students. Contact: 480-965-3349.
- ASU Institutional Review Board.
- Department of Animal Care and Technologies: This is a tremendous resource for knowledge about animals and provides care for animals

housed on campus. Contact: 480-965-4385.

- Environmental Health and Safety: EHS is available for various hazard information and other hazard evaluations. Contact: 480-965-1823.
- Global Education Office: For questions regarding international student travels. Contact: 480-965-5965.
- Institutional Animal Care and Use Committee: Research with animals, including wild animals, must be reviewed and approved by the committee before beginning research. Information and forms are available from the Office for Research and Sponsored Projects Administration at 480-965-6788.
- Institutional Biosafety Committee: Research with microorganisms, including isolating, concentrating, culturing or growing field samples and recombinant or synthetic nucleic acids must be reviewed and approved by the committee before beginning research.

  Information and forms are available from the Office for Research and Sponsored Projects Administration at 480-965-6788.
- Risk Management assists student organization leaders, members and advisors in learning to identify the potential and perceived risks involved in their activities. For travel guidelines, waivers and code of conduct, call 480-965-2255.
- Travel Services can be reached at 480-965-8375.
- Workers Compensation: Human Resources is available for questions about workers' compensation coverage and injury reports. Contact: 480-965-2701.

B. North America

Please see these resources for work in North America:

- **Hantavirus**: The CDC has detailed information about hantavirus available on the page for Hantavirus.
- **Hunting season**: To get more information concerning hunting seasons and regulations, contact the U.S Forest Service at 800-832-1355.
- **Lyme Disease**: The American Lyme Disease Foundation provides information about the disease.
- **Poison plants**: More information about poison plants, including photos, can be found on the page for the National Institute for Occupational Safety and Health.

C. International

Please see these resources for international work:

- **Advisories**: Travel advisories are announced through the U.S. Department of State. Current travel warnings, public announcements and consular information sheets are available on their website.

- **Travel health and outbreaks**: Updated information about disease outbreaks and international travel health can be found from the World Health Organization.

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