

University of California Field Research Safety

Field Research: Observation, Sample Collection, Surveys, Field Testing



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Tools and equipment vary widely...



Expanding Definitions



Urban Community Studies

Businesses

Roads

Homes

Other private property

Course Related Field Travel

Independent study projects

Class assignments

Senior thesis projects

Course field trips

Controlled Sites

Mines

Clinics

Prisons

Construction sites

Collaborator-managed sites

Field research presents unique challenges

- Hazardous terrain, climate & changing conditions
- Isolation makes for practical as well as interpersonal challenges
- Participants may have no reliable means of communication, way to leave
- Long hours, close quarters, blurry boundaries; often shared housing
- Field teams often include various roles: paid staff, students, volunteers
- Researchers and students may have field placements with other institutions and organizations, or work on public or private lands
- Many are working alone
- Situational awareness requires constant evaluation of hazards & making decisions on the go

Program Highlights

Wilderness First Aid Training & First Aid Kits

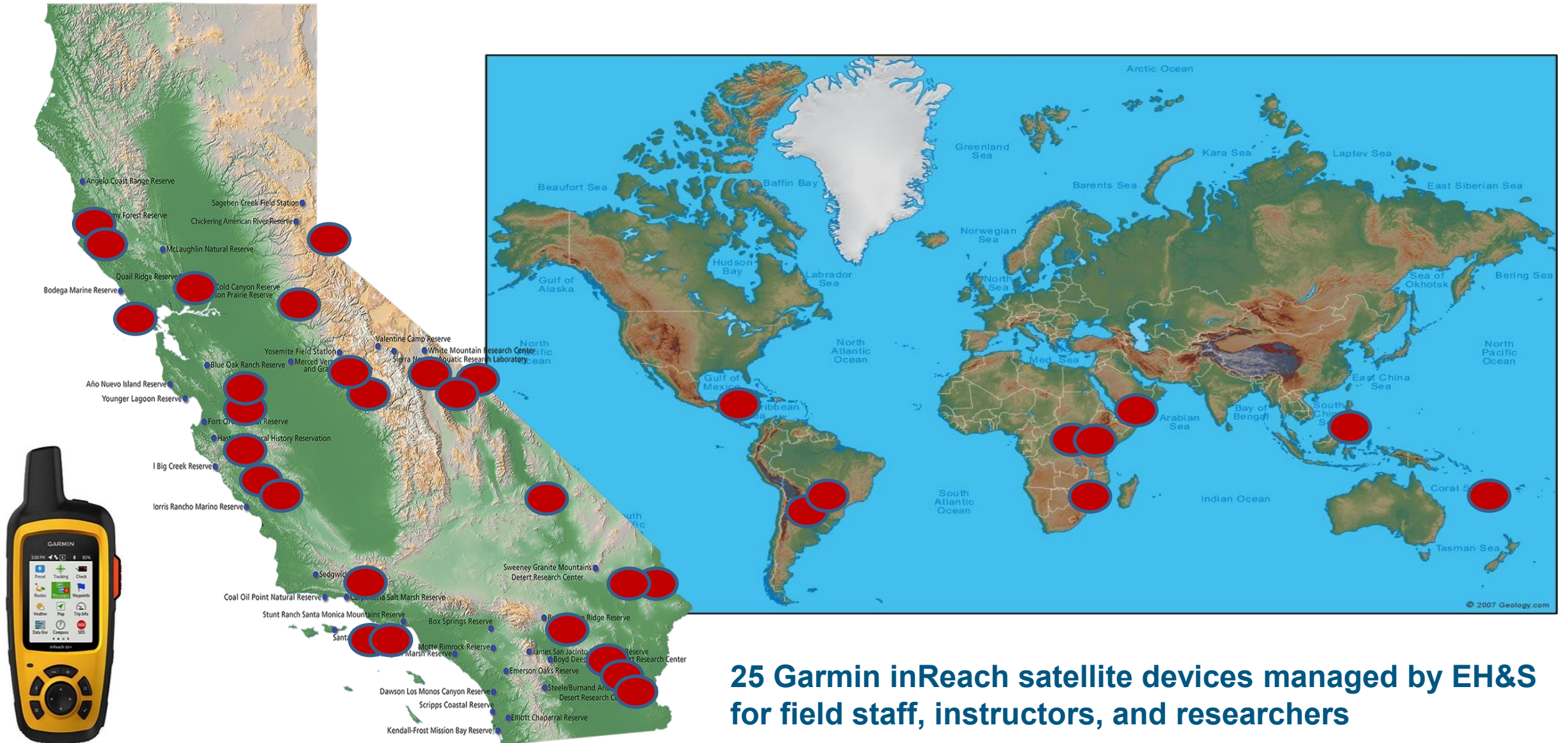


Risks are best managed
by the risk takers



Know what's in your kit
Customize for your location, group size
Replenish expired contents
Pack extra gloves!

Garmin inReach Sat Device Loaner Program



25 Garmin inReach satellite devices managed by EH&S for field staff, instructors, and researchers

5 Actions TO PREPARE

For Safe Successful Field Research



Register Your Trip for UC Travel Insurance

You are automatically registered if you book travel using UC's central travel service Connextus; otherwise, register trips over 100 miles via the web portal UC-Travel (<https://info.berkeley.edu/uc-travel>). Shortly after registration you will receive an email with a destination-specific "trip brief" and insurance card with 24/7 travel assistance numbers. If conditions change during your trip (e.g. approaching storm, disease outbreak, heightened security) you will receive updated alerts via email with specific guidance for your location. You may also access travel intelligence reports directly by logging in to the Worldwide-Travel or by downloading the Worldwide mobile app.



Schedule a Pre-Trip Medical Visit

For international fieldwork, clinical work, wildlife studies, work at altitude, scientific diving, use of respirators, noisy environments, and other hazardous work, schedule a pre-trip medical visit 6-8 weeks prior to travel (consult with your medical director or EH&S as needed).



Develop an Emergency Communications Plan

For fieldwork in remote locations - or hazardous work off campus - develop a field safety plan with site information and emergency procedures. Many researchers including biologists, archeologists and engineers carry satellite phones or handheld devices that provide GPS-tracking and emergency SOS features, such as the inReach device that supports 2-way texting globally via satellite. Your field safety plan also serves as a hazard assessment tool and can include Go/No Go criteria, refer to other protocols, JHAs, or training, and be used to brief your field team or course participants on trip logistics, precautions, and emergency procedures.



Take First Aid Training & Carry a First Aid Kit

Cal/OSHA requires at least one employee to have current first aid training at remote work sites. Wilderness First Aid training is available on or near many campuses and is an excellent option for outdoor fieldwork or remote travel. Basic first aid & CPR/AED training is also available on most campuses and Heat Illness Prevention training and Wildfire Smoke training is now available online via the UC Learning Center.

Customize your first aid kit for your destination, tasks, group size and training level; replenish expired materials and carry extra disposable gloves. At UC Berkeley we have the lightweight NOLS 4.0 med kits available to loan out, which include pointed tweezers for tick removal, MoleSkin, an irrigation syringe for cleaning wounds, athletic tape, shears, various bandages, basic meds, and even a small roll of duct tape. Additional items suggested by field researchers include OcuFresh eyewash, SteriStrips and Tegaderm, Technu, Quickclot, a Samsplint and epinephrine autoinjectors (prescription required).



Consider and Discuss Security Risks and Personal Safety

Consult with reliable local contacts, check State-Department warnings, and review a "security brief" for your destination, available via the Worldwide-Travel. Discuss: If you're teaching a field course or leading a trip, review precautions and expectations before your trip, e.g. regarding free time, leaving the group, alcohol and drug use, local crime risks, and situational awareness. Concise, clear messages keep your group aware. Effective leaders brief at the start of the day, at the start of an activity, and as conditions change. Set the tone for a safe, successful trip.



More resources are available at the UC-Field-Research-Safety website, or contact your campus EH&S office for assistance. These suggestions were compiled by Sara Soares, Research Safety Specialist at UC Berkeley Office of Environment, Health & Safety. She leads the UC Center of Excellence in Field Research Safety and may be reached at ssoares@berkeley.edu.

Precautions in the Field

<p>HAZARD</p> <p>PRECAUTIONS</p> <p>Wear long pants, socks. Use EPA-approved repellent.</p> <ul style="list-style-type: none"> Stay in middle of the trail Do tick checks Remove ticks promptly with pointed tweezers, pulling straight out. Rub site with alcohol Monitor for flu-like symptoms and bullseye ring around bite. 	<p>HAZARD</p> <p>PRECAUTIONS</p> <p>Leaves of three, let it be.</p> <ul style="list-style-type: none"> If exposed to poison oak, wash with Technu to remove oils from skin and wash your clothes. Poison oak reaction can be serious if person is highly sensitized, smoke is inhaled, etc. 	<p>HAZARD</p> <p>PRECAUTIONS</p> <p>Don't provoke or handle snakes.</p> <ul style="list-style-type: none"> If bitten by a rattlesnake, evacuate and seek medical treatment immediately to receive anti-venom. DO NOT use snake bite kits, tourniquets, or suction. Have an emergency communication and transport plan in place.
<p>HAZARD</p> <p>PRECAUTIONS</p> <p>Avoid contact with rodents and droppings.</p> <ul style="list-style-type: none"> Do not sweep or inhale dust/droppings. Wash hands after being around animals, even if you didn't touch any. Disinfect equipment, traps, and reusable PPE with a high level, EPA-registered disinfectant. Wear respiratory protection for work in potentially rodent-infested closed spaces (consult with EH&S in advance). 	<p>HAZARD</p> <p>PRECAUTIONS</p> <p>Have you had a cough, fever, or painful breathing for more than two weeks?</p> <p>ASK YOUR DOCTOR ABOUT VALLEY FEVER</p> <p>Valley Fever is caused by a fungus that lives in soil or dirt in some areas of California. You can get it by breathing in dust where the fungus grows. Digging, truck driving, construction and operating heavy machinery causes the most exposure.</p> <p>If you work outdoors, stay upwind of dirt disturbance, wet soil before digging and contact EH&S about ways to keep dust down or to be fitted for a respirator.</p>	<p>HAZARD</p> <p>PRECAUTIONS</p> <p>Dump or drain standing water. Prevent mosquito bites:</p> <ul style="list-style-type: none"> Use EPA-approved insect repellent Wear long sleeves and long pants Use windows/doors with screens or keep closed and use A/C If you get sick, tell the doctor where you traveled
<p>Basic Field Biosafety</p> <ul style="list-style-type: none"> Keep hands clean Employ barrier protection (gloves, hiking boots, long pants) Avoid bites and scratches from animals Prevent bites from mosquitoes, ticks, and fleas with EPA-registered insect repellent Disinfect equipment, traps and reusable PPE Consult with EH&S to assess work practices If you become ill, inform your doctor about your field activities and travel 		



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Health Effects of Heat

Heat Exhaustion	Heat Stroke
<p>Symptoms may include:</p>	<p>Symptoms may include:</p>
<p>If experiencing these symptoms...</p>	
<ol style="list-style-type: none"> Get water, shade, and rest. Stop all strenuous work in heat. Monitor symptoms. 	<ol style="list-style-type: none"> Call 9-1-1. Take immediate action to cool down until help arrives.

To complete training, go to the UC Learning Center and search "Heat."



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Listed by Topic

LEARNING ENVIRONMENTS

[expand all](#)

Creating a Safe Learning Environment in Field Settings +

RISK ASSESSMENT

[expand all](#)

Weather Forecasting - Field Work +

Trip Planning: Risk Management for Field Settings +

Risk Assessment Workshop - Field Safety +

Risk Assessment for Outdoor Fieldwork Using Green-Amber-Red (GAR) Model +

Overview of UC Travel & Auto Insurance +

SEXUAL HARASSMENT

[expand all](#)

Preventing Sexual Harassment & Assault in the Field Sciences +

Building a Better Fieldwork Future Workshop: Preventing Harassment & Assault in the Field +

Boundary-setting, Bystander Intervention, and Personal Safety in the Field +

DIVERSITY, EQUITY, INCLUSION, BELONGING

[expand all](#)

Accommodating Researchers with Disabilities in Field Settings +

Creating, Enforcing, and Promoting a Safe Fieldwork Culture for Diverse Researchers +

LGBTQ+ and Safety During Fieldwork +

MENTAL HEALTH

[expand all](#)

Virtual field tools to establish expectations and reduce anxiety +

Mental Health in the Field: Best Practices and Pitfalls +

Accommodating Researchers with Disabilities in Field Settings +



Creating, Enforcing, and Promoting Safe Fieldwork Culture



Speakers: Amelia-Juliette Demery & Monique Pipkin, Cornell University
Authors of the *Nature Ecology & Evolution* article: Safe fieldwork strategies for at-risk individuals, their supervisors and institutions



Strategies to Reduce Risk (Individuals)

- Know who manages site and inform of schedule
- Work with others; report threats or incidents
- Carry identification & wear identifying clothing or vests

Strategies to Reduce Risk (Supervisors)

- Review fieldwork and safety plans before any fieldwork begins
- Solicit regular feedback, discuss concerns/risks with entire group

Strategies to Reduce Risk (Departments/Institutions)

- Make available field safety, harassment training, first aid, DEI and mentorship resources
- Inform and advise about benefits of acting responsibly with care and potential ramifications for harassment, prejudice, hostile work environments



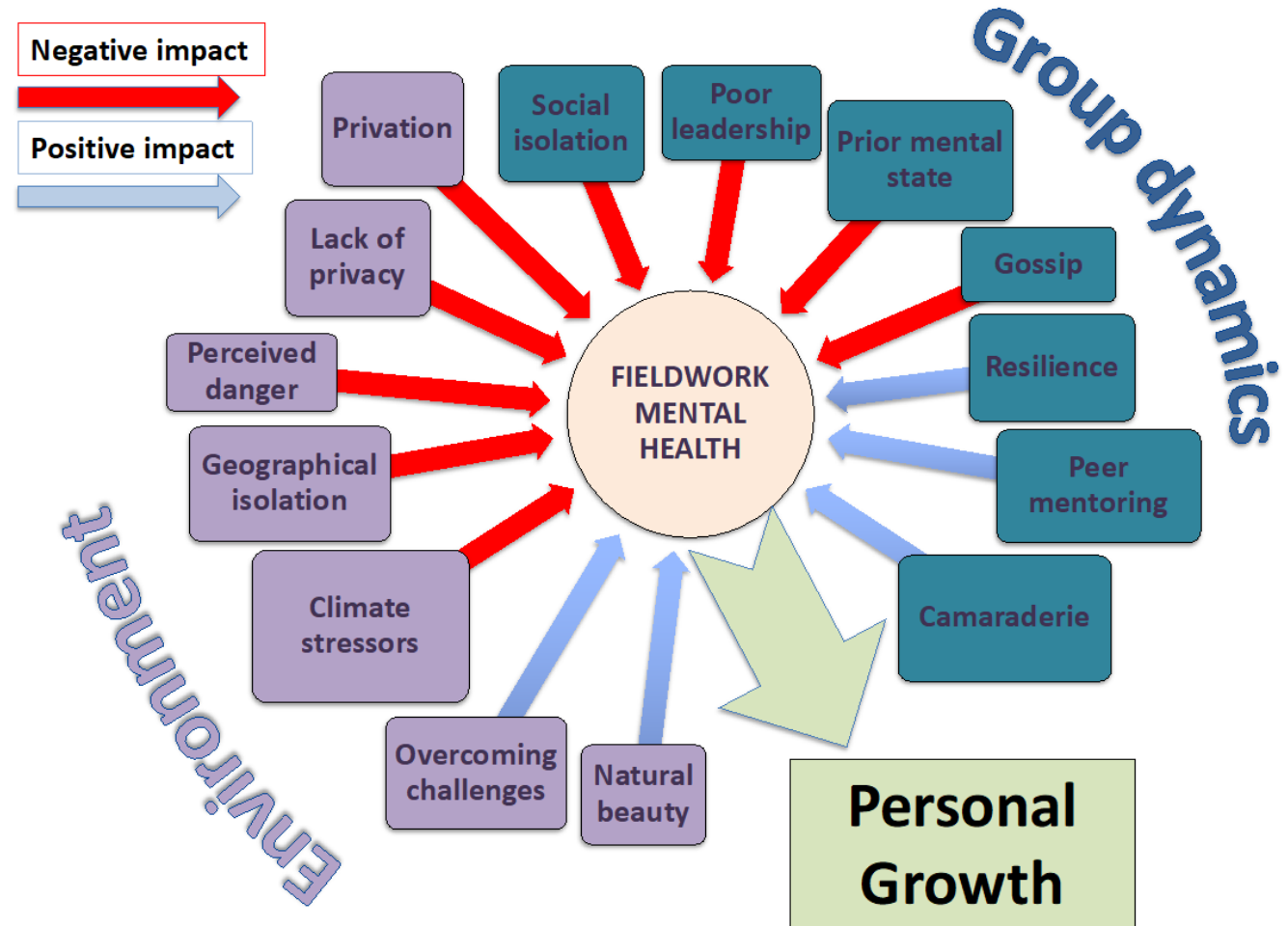
Mental Health in the Field



Speakers: Dr. Saira Bano Khan, Mind Compass Psychology
Dr. Cedric John, Imperial College of London, Dept of Earth Sciences and Engineering
Authors of *Nature Geosciences* article: [Mental Health in the Field](#)

Strategies:

- Optimize the activity for learning instead of focusing on assessment,
- Reduce environmental stressors as much as possible,
- Keep the length of field activities to a reasonable number of hours per day,
- Offer an opportunity for privacy in the evening, ensuring participants can contact their support structure,
- Have a compassionate and non-judgmental attitude towards participants expressing distress at the activity.



Building a Better Fieldwork Future: Preventing Harassment & Assault in Field Sciences

Speaker: Melissa Cronin, PhD candidate, UCSC, Conservation Action Lab

UC Confidential CARE Offices: <https://sexualviolence.universityofcalifornia.edu/get-help/>

Learn More, Become a Trainer: fieldfutures.org



Overview

- What are harassment and assault?
- Preparing and preventing
- Intervening
- Responding (Scenario Discussions)

Strategies

- Discuss boundaries and expectations
- Discuss privacy, hygiene, bathroom, sleeping protocols
- Allow mechanisms for switching sleeping quarters, work partners
- Establish high communication standard; daily group check-ins
- Establish inclusive norms (no inappropriate jokes, derogatory terms)
- Early training for prevention with field teams and courses sets positive organizational climate

5 D's of Bystander Intervention:

Direct – say/do something to engage involved party

Distract – say/do something to interrupt

Delegate – ask for help of people better able to intervene

Document – if safe, document interaction

Delay – say or do something after the difficult moment has passed

“Organizational climate is the single most important factor in determining whether sexual harassment is likely to happen in a work setting.” —National Academies of Sciences, Engineering, and Medicine

New NSF 2023 Requirements

Off-campus or off-site research is defined as data/information/samples being collected off-campus or off-site, such as fieldwork and research activities on vessels and aircraft.

- AOR signature required for all NSF proposals categorized as off-campus or off-site research
- Pilots require a 2 page supplemental plan to be submitted:
 - BIO: Biodiversity on a Changing Planet (due 29 March)
 - BIO: Core solicitations in DEB, MCB, IOS (for proposals after 18 April)
 - GEO: GeoPaths (due 27 March)
 - GEO: CTGC (due 3 April)

Action Required: PI/s need to sign and submit a plan to Berkeley's Sponsored Projects Office (SPO) before SPO will approve the proposal being submitted to NSF. Refer to the following guidance from SPO and the SPO Plan Template



NSF 2023 New Requirements – Pilots

1. Brief description of the **field setting & unique challenges** for the team;
1. Steps the proposing organization will take to nurture an inclusive off-campus or off-site working environment, including processes to establish shared team **definitions of roles, responsibilities**, and culture, e.g. **code of conduct, trainings, mentor/mentee mechanisms**, and **field support** that might include regular check-ins, and/or development events;
1. **Communication processes** within the off-site team and to the organization(s), that minimize singular points within the communication pathway (e.g. there should not be a single person overseeing access to a single satellite phone);
1. Organizational mechanisms that will be used for **reporting, responding to, and resolving issues of harassment** if they arise.

Potential Actions

- ❑ Read and discuss a published article:
 - *Safe fieldwork strategies for at-risk individuals, their supervisors and institutions, [Nature 2021](#), Demery and Pipkin*
 - *A set of principles and practical suggestions for equitable fieldwork in biology, [PNAS 2022](#), Ramírez-Castañeda et al*
 - *A guide for developing a field research safety manual that explicitly considers risks for marginalized identities in the sciences, [BES 2022](#), Rudzki et al*

- ❑ Review “A Guide to Preventing Sexual Violence & Harassment in Field Placements,” UC Berkeley Path to Care ([link](#))
- ❑ Review training content from the UC Field Safety Leadership Library ([link](#))
- ❑ Host a FieldFutures workshop on prevention and bystander intervention ([link](#))
- ❑ Create a “Community Agreement”
- ❑ Other ideas? Please share with fieldsafety@berkeley.edu

Upcoming Training for Field Researchers

March 17 & 18: 8 hour Wilderness First Aid training, led by Sierra Rescue from 8:30 am- 5 pm, Mulford Hall Courtyard (two dates to choose from, \$70)

March 22: Panel Discussion on Safe & Inclusive Fieldwork, 3:30 - 5 pm in 150 University Hall

Prof. Rebecca Tarvin, IB/MVZ

cici ambrosio, GenEq Resource Center

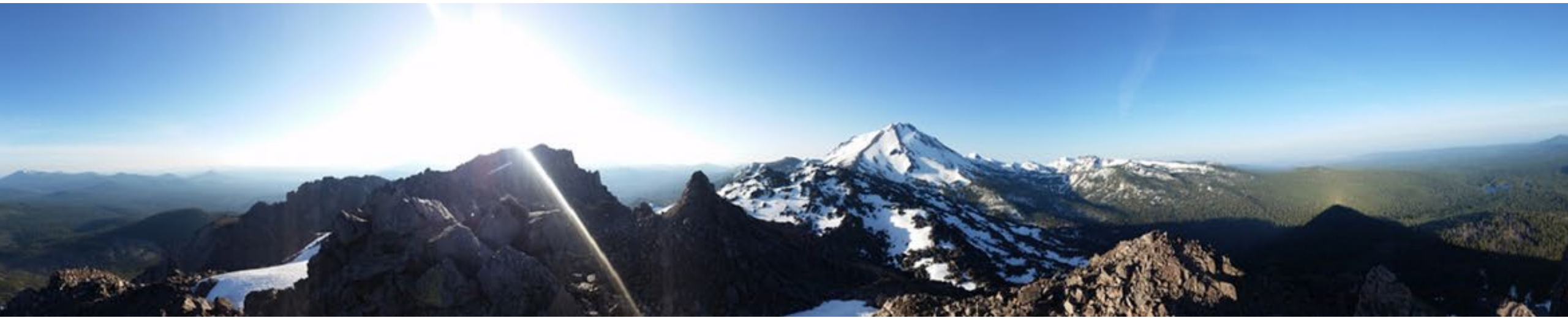
Nico Tripcevich, Archeology

Khirin Carter, Path to Care

Pamela Miller, SPO

March 15: Impact Bay Area Self Defense, 3 hour training co-sponsored with the GenEq Resource Center (4-7 pm in 150 Uhall, free)

Registration required. More info posted at <https://ehs.berkeley.edu/field-research> or email fieldsafety@berkeley.edu



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