

Fieldwork and Lab Safety.

Long-term goal: Implement strategies from Demery, A.J.C., Pipkin, M.A. Safe fieldwork strategies for at-risk individuals, their supervisors and institutions. *Nat Ecol Evol* 5, 5–9 (2021). <https://doi-org.proxy.library.cornell.edu/10.1038/s41559-020-01328-5>, specifically [Box 1, see bottom of this document](#).

At the end of this document there is a more comprehensive list from Demery and Pipkin (2021) which includes the longer term achievable goals that can be directed towards IDEEAS and DEIAR to work on.

Short-term deliverable (ideally by start of Fall semester): Update [Off campus policy on EAS Intranet](#). Comments on this version of the document. This document has several gaps from what should be included (based on best practice recommendations) in a comprehensive field and lab safety plan, even before considering at-risk individuals.

- Update, expand, and incorporate this resource shared by Rick Allmendinger titled, "[EAS Guidelines for Safe Fieldwork](#)" within the off campus policy
- This makes a new single document which we suggest should be broken down into 3 sections:
 - a. Before (from before grant proposal!). Try to move away from a "just in time" workflow.
 - b. During.
 - c. After to include feedback from participants to create a continually evolving programme and improving experiences in the field.
- In the near term we propose EAS can look to address the below, of importance is to expand "field" safety to include Lab safety and off-hours (likely solo) work.

Road Map:

- Reach out to the department chair to request a committee be formed to carry out this work.
 - This committee should invite those who have been working on these issues to date, as well as parties actively engaging in fieldwork. However, we emphasize that every member of our department has a vested interest in safety at all levels.
- Committee will aim to update department documents before Fall Semester 2021
- After this document has been updated/created, we request the committee then be charged with implementing a "Strategies for researchers, supervisors and institutions to minimize risk", as outlined in Demery and Pipkin (2021).

Field Work

Safety of individuals to be considered **from the conception of a research proposal**. Including what equipment, training, and support will be needed so that adequate funds can be requested within the grant proposal (including Personal Protective Equipment, Personal Field Equipment).

Including individuals from different department levels in planning and conception stages of fieldwork development can help mitigate unforeseen complications. Even if those individuals are not participating, the experiences of department members participating in fieldwork at a given level will improve the experience for all. Involve people at different levels in planning and look to address the following:

1. Open lines of communication between fieldwork participants and programme leader at all stages.
2. Be clear in who else they can raise concerns to, outside the programme leader, before, during, and after fieldwork has occurred. Transparency is important when building trust.
3. Specific attention should be paid to minority and gender identity issues raised.
4. Honest, pre-trip assessments can be helpful.
5. If even one participant has a genuine concern the programme leader should have alternative fieldwork plans in place and be prepared to shift sites.

Lone working in a field, should this be permitted/is this absolutely the only way to get data? If so, a written communication plan that gives notice of field plans is a way to maintain consistent communication with a point of contact (“buddy system”).

Currently there is no formal training required or suggested prior to field work. This should include, but is certainly not limited to (with some examples):

1. Provide training to supervisors on how to be an effective mentor to diverse individuals.
 - a. This training should provide clear lines of communication for anyone conducting fieldwork, regardless of the researcher’s institutional affiliation (for example, a visiting researcher working with faculty and field sites managed by the institution).
2. First Aid training.
 - a. CPR and Basic first aid and CPR training
<https://emergency.cornell.edu/training/>
Further CPR/First Aid Resources
<https://cuems.cornell.edu/cpr-firstaid/>
<https://cornell.sabacloud.com/>
 - b. Wilderness First Responder Courses
<https://scl.cornell.edu/coe/pe-courses/fall-pe-courses/wilderness-medicine/wfa>
<https://www.nols.edu/en/coursefinder/courses/wilderness-first-responder-WFR/>
3. Deescalation training.
 - a. This training should be for effective management of both internal conflict resolution within the group as well as providing skills relevant to the field when dealing with other stakeholders and the wider public.
 - b. When field work is international this will likely require additional considerations regarding the laws, culture, and norms of the country being visited.
4. Bystander intervention training
 - a. <https://health.cornell.edu/initiatives/campaigns-materials/intervene-bystander-campaign>

5. Implicit bias training
 - a. [https://gradschool.cornell.edu/diversity-inclusion/faculty-resources/implicit-bias-re-sources/](https://gradschool.cornell.edu/diversity-inclusion/faculty-resources/implicit-bias-resources/)
6. Office of Global Learning as possible resource for international work.
 - a. <https://globallearning.cornell.edu/>

EAS can supply:

- Hi-vis clearly branded safety vests or other "Uniforms"
- Safety cards with information on (IDEEAS to provide template)
- Car Vehicle Magnets
- Suggestion to explore possible corporate sponsorship for personal field equipment through the department or CALS level?
- For students not familiar with the outdoors we propose that EAS (or maybe a CALS level initiative?) can host a workshop/annual event which covers the basics of being outdoors in rural settings for prolonged periods of time.
 - Could be expanded to include other safety training (ie. lab safety, lone working, and working late at night safety).
- Cornell Outdoor Education offers Gear Rentals, which can help offset cost of acquiring equipment: <https://scl.cornell.edu/coe/outfitting>
- A document for participants to sign. This facilitates an honest discussion on what is expected of the participants and what they can expect from EAS in keeping them safe.
 - IDEEAS Fieldwork Action Team will check to make sure we are in compliance with Cornell Policy.

Lab Work

Encourage the use of the rave guardian app to promote campus safety. Particularly if working outside normal office hours or lone working. Safety timer function could be very useful.

<https://www.cupolice.cornell.edu/campus-safety-security/rave-guardian-app/>

Regular Lab meetings are important, and should include :

- Safety moments
- Regular reviews of policies, including whistleblower procedures.
- DEI issues
- Shared space coordinations

Mentorship in the Lab is a huge part of learning techniques and other informal protocols.

- Groups can get tight and exclusive
- Lack of someone to guide you can lead to quick fall out and dangerous mistakes
- Suggest formal mentoring programs

Suggested Resources from URGE and IDEEAS Fieldwork Action Team

At-Risk Individuals

[Safe Fieldwork Strategies for At-Risk Individuals](#)

LGBT Fieldwork

<https://eos.org/features/the-challenges-of-fieldwork-for-lgbtq-geoscientists>

The Fieldwork Initiative

<http://fieldworkinitiative.org/>

It's time to change the geosciences' outdated, exclusionary, and ableist field requirements

<https://sisterstem.org/2020/07/22/its-time-to-change-the-geosciences-field-requirements/>

Accessible Earth

<https://www.geo.arizona.edu/AccessibleEarth>

The Enabling Remote Activity Project

<https://projects.kmi.open.ac.uk/era/>

Creating Spaces for Geoscientists with Disabilities to Thrive

<https://eos.org/opinions/creating-spaces-for-geoscientists-with-disabilities-to-thrive>

CALS Resources

<https://cals.cornell.edu/diversity-inclusion/fieldwork>

Box 1 Strategies for researchers, supervisors and institutions to minimize risk

A. What can researchers do to minimize risk to themselves on a field site?*

1. Talk with colleagues and supervisors about the risks, preparations to minimize risk, and reporting mechanisms. Be aware that the conversation will likely be difficult and will require mental and emotional readiness by both parties. If a supervisor is dismissive of this conversation, individuals should be aware that they can and should reach out to additional mentors, institutional or industry advocates (for example, an ombudsman, Equal Employment Opportunity officer, Diversity and Inclusion administrators, Student Disability Services or other trusted professionals to have this conversation).
2. The scale of risk can depend on the country in which the fieldwork is conducted (for example, elements of identity such as sexual orientation may be criminalized). At minimum, be aware of and abide by any international laws and customs in addition to local foreign laws, current political climate, actual degree of law enforcement, and mandate a conversation between researcher and supervisor to establish an emergency contingency plan.
3. Contact others (especially those who share an at-risk identity) that have previously used a field site at a location where there is a history of risk. It is recommended that researchers document all known cases of risk at that location.
4. Take advantage of training opportunities to increase field safety and promote awareness (for example, self-defence courses, first aid, safety aids and cultural history courses about the location of the field site).
5. Know who manages the field site(s) and inform the field managers when and where you will be at those locations.
6. Introduce yourself to the neighbours surrounding the field property, or leave a short note informing neighbours about research being conducted at nearby locations and who will be conducting the research. It is advisable to also include contact information, preferably information that clearly demonstrates affiliation with the research institution to provide additional credibility.
7. Engage in fieldwork with another person, when possible. When this is not possible, have a point of contact (preferably the supervisor) who is aware of your whereabouts and expected schedule on a given day. A written communication plan that gives notice of field plans is another way to maintain communication with a point of contact.
8. Always carry credentials in case someone challenges why you are at the field site. These include photo identification (driver's license, passports, institution identification) and relevant permits. Any additional form of identification that clearly demonstrates

affiliation with the research institution can also be helpful (that is, university apparel, institution bumper stickers or car magnets, and so on).

9. If at any time you feel unsafe, you should contact your supervisor to discuss ways to modify the project. While supervisors may work closely with researchers, they often do so outside of the field site, and therefore may not know of the risks and dangers encountered therein. It is paramount that at-risk individuals advocate for themselves.

**If you are establishing your own field site and/or are supervising others, review sections B and C for additional strategies.*

B. In the event that an at-risk individual's supervisor is unwilling to help minimize risk, the individual should leverage available resources at their institution:

1. Create a support group for (1) reporting and documenting risk and (2) gathering witnesses to help showcase the level of threat. The support group might range from peers, a counsellor, to established institutional services.
2. Report the risk and the supervisor, following the institution's established reporting policy or office (see section A for examples). This report can include documentation of the risk (for example, recordings of a verbal altercation, written correspondence to an inactive supervisor, photo documentation of a slur and so on).
3. Reach out to the departmental officer in charge of reporting situations to higher echelons of administration who would provide administrative and legal support for the researcher. There are laws in place to maintain the safety of researchers.

C. What can supervisors do to support at-risk individuals?

1. Self-educate on the experience of your team member's identity, and the corresponding risk that they may encounter in the field. *This does not involve asking researchers to relive trauma surrounding their identity as a source of education.* Rather, use available resources to self-educate. First-person accounts and resource compilations are available (see Table 1). Furthermore, self-educate on the politics, demographics and culture of the areas surrounding established field site(s), in order to be fully aware of potential risks.
2. Prior to fieldwork, contact relevant institutional offices for risk management on how to best manage risk in the field and identify resources for researchers to identify the social landscape in which the field site(s) is(are) situated and identify potential risks.
3. Create a field risk management plan that discusses risk at established field sites. This document should detail potential risks and identify mitigation(s) for that risk. This document should also act as a living document for recording safety incidents. Copies of

these should be carried with fieldworkers on their person as well as left in the workplace or lab.

4. Provide materials to clearly identify researchers and their purpose (for example, signs for vehicles and field sites, safety vests and so on). These items should be provided for the researcher so that their use is easily implemented.
5. Have a conversation with all research team members on the risks and preparations to minimize risk. This can include a statement that certain demographics may be at higher risk, and that the supervisor is available to discuss with any researcher about concerns and proactive measures. Educational resources, such as this document, should be made available to all researchers, who can then self-select to engage in a conversation about safety issues surrounding their specific identity(ies).
6. Create a time and space to talk to research team members specifically about fieldwork safety concerns in advance of the field season, and touch base with them throughout the season to address new concerns. As a reminder, this is an uncomfortable reality and merits the need to establish a space and time for both parties (researcher and supervisor) to be ready and willing to engage in this important discussion.
7. Even after education, supervisors that do not share the same identity as their researchers will be unaware of all potential risks to researchers. If researchers bring up potential or experienced risks, validate their experiences and assist in modifying the project so that they can safely continue conducting research.
8. The scale of risk can increase dramatically in an international field site. At minimum, be aware of and abide by any international laws and customs in addition to local foreign laws, current political situations, actual degree of law enforcement, and mandate a conversation with the researcher. Furthermore, this conversation should include allies in the field — collaborators and/or supervisors at the international field site — to discuss any safety concerns that the researcher may not be aware of.
9. At established field sites, introduce researchers (via e-mail or in-person) to the manager of those locations, if they exist. If there are multiple managers, researchers should be introduced to each manager to minimize any miscommunication that could lead to increased risk.
10. When possible, show new researchers established field locations, teach them about the specific concerns of that field location, and inform them of the resources in accordance with established safety plans. The resources should have contact information about field site personnel relevant to research and safety (for example, contact information of the local police department).

11. Assist researchers in establishing safe housing before arriving at the field location. A safe and secure housing location includes the following: researchers are able to secure food, travel safely to and from field sites, and there are supportive points of contact in the local community.
12. Review and agree upon fieldwork and safety plans with the researcher before any fieldwork begins.
13. Actively engage with researchers on how to reorganize fieldwork practices if and when there are restrictions on movement; for example, local ordinances limiting activity (that is, curfew, stay-at-home orders and so on).

D. What can departments and institutions do to support at-risk individuals?

1. Make a general field safety, harassment training and first aid course available and mandatory for all researchers to attend in the institution or department.
2. Make a list of resources available about diversity in the sciences, barriers to entry in the sciences and safety concerns (see Table 1 as well as the list of references).
3. Regularly re-evaluate all current department and institutional practices to remove barriers to inclusion in safety practices. Develop a proactive plan to alter detrimental (anti-inclusion and equity) practices and document the process to increase transparency of decision-making.
4. Inform and advise supervisors and research groups about the benefits of acting responsibly and with care, as well as legal and social ramifications if they fail to invest in researcher safety during university-sanctioned fieldwork.
5. Provide training to supervisors on how to be an effective mentor to diverse individuals. This training should provide clear lines of communication for anyone conducting fieldwork, regardless of the researcher's institutional affiliation (for example, a visiting researcher working with faculty and field sites managed by the institution).
6. Ensure field course locations and housing are appropriate, safe and equitable for all identities. Solicit regular, anonymized feedback from field researchers to determine the climate and safety of field sites and accommodations, and engage supervisors in responding to this feedback.
7. Ensure that all department- or institution-managed field sites are clearly labelled as a part of the institution. On this signage, include acceptable activities allowed at such locations (for example, birdwatching, dog walking, no public access).

8. Collate information on all active or newly established field sites throughout the year and provide this information to relevant police departments. Due to the sheer volume of field projects occurring at a single time, this cannot feasibly be accomplished by supervisors and researchers. Supervisors or individual researchers should only have to contact specific law enforcement if the field site(s) was(were) not a part of this initial package.
9. Supply an official letter of support for researchers doing fieldwork with contact information. This provides additional credibility to the researcher, if and when they are approached and challenged.