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**Position Summary.** This Position Statement provides guidance on the Geological Society of America's (GSA) best geologic fieldwork practices for both research and educational expeditions. GSA urges geoscientists to conduct fieldwork in an ethical, respectful, and sustainable manner that: (1) provides a safe, equitable, and inclusive environment for conducting responsible fieldwork; (2) respects the land rights and laws of local, state, tribal, and federal jurisdictions, Tribes, Indigenous peoples, local communities, and private landowners; (3) obtains the proper fieldwork and collection permission and follows all agreed-upon work as specified; and (4) minimizes destruction of outcrop and disturbance of landscape. GSA opposes fieldwork and the collection of geological samples (e.g., rock, mineral, sediment, soil samples, etc.) and fossils of any type in active conflict zones for any purpose, such as research, education, and public display (e.g., museums, publication, and sale).

## CONCLUSIONS AND RECOMMENDATIONS

- Plan all fieldwork carefully to provide a safe, respectful, equitable, and inclusive field environment for all. Make clear upfront that discrimination, harassment, and/or bullying will not be tolerated.
- Obtain all necessary permits and permissions to access and collect geological samples and fossils on public or private lands. Be aware of all laws related to the disturbance and restoration of cultural and historical areas or where there may be cultural artifacts and human remains.
- Educate yourself on the historical and current geopolitical events in a region in which you plan to conduct research.
- Include, where possible, researchers from local universities and institutions, local cultural knowledge-holders, and domain experts in fieldwork. Give authorship and/or financial compensation to collaborators regardless of affiliation or educational status.
- Determine if specimens collected in a given area may have been collected illegally or during a period of conflict.
- Consider the following questions in advance of conducting fieldwork:
  - Who is connected to and knowledgeable about the areas in which you do fieldwork? (Consider that knowledge and expertise come in many forms.) How will you compensate collaborators and community members for their contributions?
  - How might research activities physically impact the places in which you work? How will your research impact future access to the place or resources you use?
  - What safety risks might arise during fieldwork?

## RATIONALE

**Conduct in the Field.** Fieldwork has traditionally been one of the least diverse and inclusive activities in geology. Yet inclusion, diversity, and equity are as important in fieldwork as any other area of research. GSA requires field-trip leaders and field-trip participants to comply with the Society's [Field Safety Policy & Procedures](#). Geoscientists should be aware of the large differences that exist in individuals' exposure to outdoor activities. Field-trip leaders may seek additional guidance from organizations focused on increasing diversity in nature-based activities when planning field trips. Leaders and participants are to work actively to assure everyone in a field party is operating at the same level of comfort, acceptance, awareness, and safety. This will require checking ahead of time as to attitudes and to make sure everyone has appropriate field gear.

Fieldwork often occurs in remote settings with cultural norms different from host institutions. Field leaders and participants are to prepare themselves in advance by anticipating problems that might arise. Field leaders should inform and set expectations for both the field party and local stakeholders before the trip. Once in the field, it is too late.

Field parties are to operate at all times under the same codes of conduct applicable to meetings and academic institutions, such as those adopted by the American Geoscience Institute, American Geophysical Union, and GSA, despite operating independently and/or in isolated areas. Furthermore, field leaders need to familiarize themselves with local laws and jurisdictions that are likely different from home jurisdictions and communicate them to the group before the trip to ensure everyone is aware of them.

Field parties are to have a mechanism for reporting behavioral misconduct, such as those outlined in [GSA's Field Safety Policy and Procedures](#). The attitude that "what happens in the field, stays in the field" is unacceptable and is an invitation for abuse and harassment. All members of a field party are to be aware that any incidents will be reported. Research shows that setting rules and providing outlets for reporting up front reduces the occurrence of behavioral misconduct (reference 1).

The safety of the group and each individual member is the number one priority during fieldwork. Sampling, movement to and in remote locations, and rapidly changing conditions can be challenging—even dangerous. Field leaders are to stress safety and to recognize that individuals have different levels of awareness of safety. First aid kits, first aid training, CPR training, and cellular or satellite phone emergency communications are essentials

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whose procurement is the leader's responsibility. The leader is also to assure that multiple people in the field party have the skills and knowledge to use these items or perform these activities. The names and emergency contact information for all participants should be on hand and made available to the host institution prior to departure for the field.

**Illegal collecting.** Illegal collecting is the collection of any material without obtaining the proper permissions from relevant authorities prior to site access. Permissions may be in the form of collecting permits from government agencies or explicit permission by a private landowner (preferably in writing). Oftentimes, it is illegal to remove resources from the country of origin. It is the responsibility of the collector to know the legality of collecting in the region in which they wish to work.

Regardless of whether fieldwork is conducted domestically or internationally, the necessary permits and permissions are essential to collect geological samples and fossils on public or private lands. If proper permits and/or permissions are not obtained for any reason (e.g., absence of permitting office due to unstable government or requests denied), fieldwork and collection shall not occur. Collection from field localities includes mindful and respectful retrieval of samples that preserves the outcrop for further study and does not disturb cultural artifacts or human remains. It is critical to have full documentation of provenance in terms of stratigraphic, structural, geographic, taphonomic, and paleoenvironmental information where appropriate. If cultural artifacts or human remains are disturbed, geologists should be fully aware of all laws and expectations for restoration or repatriation (see below).

**Human remains and cultural artifacts.** Human remains must always be treated with dignity and respect. Cultural artifacts, particularly those belonging to Indigenous groups and artifacts found in or near burial sites, should also be treated with respect, as these objects hold high cultural and spiritual importance.

Geoscientists are expected to understand and comply with the laws and ethical codes that govern archeological, biological, and human or cultural fields of study. Human remains and cultural artifacts are protected under international, U.S. federal, state, and tribal law. Indigenous groups have jurisdiction as they are lineal descendants of the deceased individual(s) or the groups who produced the artifact(s). If geoscientists encounter human remains or cultural artifacts on federal or tribal lands, regardless of the purpose of the fieldwork, they are required to leave these objects where they are and report their existence to the appropriate lineal descendants (e.g., Native American governing organizations, local cultural stewards and practitioners, etc.) and to follow the [Native American Graves Protection and Repatriation Act](#).

**Illegal Trade.** Illegal trade is defined herein as barter, sale, and/or acquisition of fossils and other geological samples in a fashion that is against the laws of the country or region from which those samples and fossils were collected. Geoscientists shall not contribute, directly or indirectly, to the illegal trade of geological samples and fossils. Direct contributions to illegal trade would include the sale or purchase of geological samples or fossils when the provenance or mode of acquisition is known to be nefarious. Indirectly promoting illegal trade can include conducting research on geological samples or fossils that were collected through illegal means. In this case, the researcher may be unaware a given sample or fossils was acquired illegally. Researchers can avoid cases like this by knowing the full provenance of a geological sample or fossil before conducting research. Research on geological samples or fossils illegally collected and traded must be avoided, as adding research value to those specimens ultimately will increase their monetary value and encourage future illegal trade of similar specimens. Beyond jeopardizing the paleontological and geological resources of a given country, the illegal trade of geological samples and fossils can drive unsafe work conditions and, in some examples, even slave labor.

**Conflict zones.** Conflict zones are not formally defined by the United Nations or by other international organizations but are rather described by general criteria that can include the presence of an international or domestic armed conflict, the transition from an armed conflict to peace, widespread or serious human rights violations and abuses, political and social instability or repression, or institutional weakness or collapse of state infrastructure. Fieldwork and collection in conflict zones may increase the risks of scientists being complicit in human rights abuses committed by other actors and might further encourage exploitation of these resources (refer to Illegal Trade—Direct and Indirect). GSA does not condone fieldwork in active conflict zones.

**Collaborative endeavors.** GSA recommends that geoscientists include international collaborations or involve the appropriate Indigenous groups (including those groups without federal recognition) and cultural stewards who are living and working in the research study region. Meaningful collaborations should be sought where possible to avoid research practices commonly referred to as neo-colonial, helicopter, or parachute research (reference 2). Collaborations can foster a shared learning experience, promote cultural awareness, and build capacity in the local community, if appropriate. Collaborations can also help to increase awareness of issues surrounding sample and fossil collecting laws, norms, and potentially under-reported conflicts in a region.

Geoscientists conducting fieldwork and collection abroad are ambassadors of the community and our field of science. Our international fieldwork and research can serve as examples of good scientific diplomacy, highlighting the potential for science to build relationships across disciplines and geopolitical borders. As part of the privilege of working within an international community of researchers, and pursuant to GSA's Code of Ethics & Professional Conduct, it is our responsibility to behave legally, ethically, and respectfully.

*Adopted October 2022*

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#### ABOUT THE GEOLOGICAL SOCIETY OF AMERICA

The Geological Society of America unites a diverse community of geoscientists in a common purpose to study the mysteries of our planet (and beyond) and share scientific findings. Members and friends around the world, from academia, government, and industry, participate in GSA meetings, publications, and programs at all career levels, to foster professional excellence. GSA values and supports inclusion through cooperative research, public dialogue on earth issues, science education, and the application of geoscience in the service of humankind.

## OPPORTUNITIES FOR GSA AND ITS MEMBERS TO HELP IMPLEMENT RECOMMENDATIONS

All GSA members, field trip participants, universities, colleges, and research institutions can adopt the guidelines set forth in this position statement to promote responsible fieldwork practices.'

Additionally, all GSA members and program participants should take this opportunity to review and be sure to comply with the following GSA policies that govern the professional activities of our members and other geoscientists who attend our field trips: [Code of Ethics & Professional Conduct](#), [Events Code of Conduct](#), and [Field Safety Policy & Procedures](#)

## REFERENCES

1. National Academies of Sciences, Engineering, and Medicine (2018). Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine. Washington, DC: The National Academies Press. Retrieved from <https://doi.org/10.17226/24994>.
2. Adame, F. (2021). Meaningful Collaborations Can End “Helicopter Research”: Nature. Retrieved from <https://doi.org/10.1038/d41586-021-01795-1>.