

Testimony to SST committee December 6, 2022

Dr. Anne Kelly, The Nature Conservancy Alaska

Thank you to Representative Johnson and the Committee for inviting me here to speak with this committee. I'm presently the Deputy Director of the Nature Conservancy in Alaska. I have a PhD in climate change science, and an undergraduate degree in astrophysics. I've been the director of remote field research stations in the Mojave Desert and mountains of California. I've led field teams as a US Geological Survey scientist in the mountains and deserts of southern Utah, and as a conservation scientist on islands off the coast of California. As a graduate student, I led research crews camped in the Sierra Nevada and desert mountains of California, the forests of central Ontario in Canada, and the Arctic coastal tundra of northern Alaska. I also worked at mountaintop observatories as an astronomy undergraduate.

Why focus on harassment in fieldwork, versus harassment in sciences or academia more broadly? Fieldwork carries with it its own special risks and culture. My field campaigns were based in tents, miles from a road; and in huts near small villages only accessible by plane; and at NSF- and university-funded research stations with dorms and cafeterias; and at military barracks on remote islands; and at self-built cabins accessible only by canoe. All of these research crews included bright, dedicated young scientists eager to learn and to help the world. None of these research crews had adequate safety training or institutional support for a safe and healthy work environment. We were often groups of young scientists – city kids – in our twenties, dropped in an unfamiliar environment, with uncertain hazards like dangerous equipment, 110-degree heat, or hungry polar bears. We almost never had access to cell service, a two-way radio, a satellite phone, or other means to communicate. The entire crew would often share one vehicle, which might be several miles' walk across rugged terrain from the research site. Field protocols were often risky, like using power tools or climbing tall trees without training or safety equipment. The phrase “what happens in the field, stays in the field” is common around the campfire after a long field day. Work crews are small, and interpersonal dynamics in these vulnerable conditions can be intense. Junior crew members are at the mercy of their team leads, whose expertise and say-so have almost total authority in their safety and well-being. These were norms across the many institutions and locations.

These remote and rugged and challenging conditions engender a culture of machismo, and a culture of “work hard, play hard”. Push your body to its limits all day at work, and then drink beer all night around the campfire. The consistent message across these different situations was to be tough, suck it up, don't complain, and prove yourself. Strong academic hierarchies punish anyone asking for water breaks, for first aid kits, for proper training, and for reporting problems. This toxic culture breeds bullying, harassment, and assault. The remote and isolated nature of the work means targets of harassment cannot report or flee, and if they do, they risk their own career. Given the difficult conditions, strong hierarchies, and macho team cultures, it's unsurprising that fieldwork is a hotspot of harassment. Field research culture rewards those who participate in it, and pushes out anyone else.

Harassment in the field can take many forms. It can be the everyday microaggressions of slights, social exclusions, jokes, and put-downs. It can be exclusion from opportunities for learning and mentorship, like tools being snatched from a junior scientist's hands. It can take cruel and dangerous forms, like exclusion from meals, hiding keys to vehicles, denying access to communication devices, shutting people out of shelter, or issuing faulty safety gear. The overt, stereotypical forms of harassment, like direct sexist comments or assault, are less common but still all too prevalent.

I witnessed countless instances of harassment and bullying against my fellow scientists, each of which taught us to fall in line, toughen up, and stay quiet. At Arctic and desert research sites, I

experienced harassment and assault, and endured the punishing process of attempting to report and failing to find support. I reported a serious assault only to alert the other students in the research group, but there were no policies to protect me or my career. My graduate adviser pushed me out of groundbreaking Arctic research program after I reported that a postdoc drugged and assaulted me in a remote California desert research site.

When harassment in the field occurs, there are almost no resources for support. Jurisdictions of responsibility are often unclear. Remote locations mean that escape, or removing perpetrators, can be impossible. And crucially, behavior that doesn't meet a threshold of extreme, blatant, provable illegality often stays unaddressed. There are few avenues of recourse for dealing with the much more pervasive and still destructive forms of harassment that might be technically legal, or difficult to prove.

As a scientist at the US Geologic Survey, my colleagues and I investigated the protections for staff against harassment. For months, our emails to EEOC teams went unanswered, and our voicemails to whistleblower hotlines were never returned. Support websites had broken links and outdated personnel directories. Policies on harassment, safety, and support for field workers were nonexistent. We wrote our own safety and support protocols for our small team. Agency leadership at the Department of Interior told us to cease our efforts, but some of our major policies were adopted by the USGS several years later due to the leadership at the regional office.

Professor Kate Clancy and her colleagues surveyed academics in the field and found that most field scientists of all genders have experienced harassment or assault (Clancy et al, 2014). Few of them knew how to report harassment, and almost none had confidence that a report would be helpful. Research shows that harassment targets women more than men, junior staff more than senior staff, queer people more than straight cis people, and racial minorities more than white researchers.

Harassment in the field must be stopped. Its direct harms are obvious: no one should be bullied, harassed, or assaulted at work or anywhere. Harassment in the field, when scientists are at their most vulnerable, can cause profound psychological and career damage, as we've heard about today.

The secondary effects of harassment are also serious. Research on underrepresented young scientists show that field experiences are formative. Good field experiences drive people with marginalized identities to pursue a career in field research. Bad experiences, which are common, disproportionately discourage underrepresented scientists, and drive them out of science. The current climate of field science is exclusionary, which has led to participation in field science that does not reflect society as a whole.

Crews with high rates of discrimination and harassment have higher accident and injury rates. Other secondary effects include a diminishment in the quality of science produced. And finally, a culture of harassment is self-perpetuating. Young scientists who participate in or at best tolerate harassment remain in their science careers. Those who don't, leave, and the cycle continues.

When I became the director of the Yosemite and Sequoia Field Stations for the University of California, the well-being of visiting scientists was my foremost concern. I joined the international Organization of Biological Field Stations, a professional society for leadership of field research stations. I found the organization perpetuated the machismo and harassment of field research culture, and over several years led several initiatives to change the culture within the leadership and broader community. I developed anti-harassment policies for the forty University of California field research stations, and joined the NSF-funded AdvanceGEO team to train scientists nationwide to fight harassment in field research and laboratories.

With my fellow researchers, we pushed for critical changes from the grassroots, by teaching each other skills and developing our own tools to allow our research community to survive our everyday work. Ultimately though, the responsibility for change and accountability lies with the research institutions themselves. In an effort to provide institutional leadership with guidance for change, the National Science Foundation funded Dr. Kristen Yarincik, then at the Center for Ocean Leadership, and myself, to develop robust recommendations for institutional change.

Dr. Yarincik and I convened a workshop of 70 experts to develop recommendations for research institutions to prevent and respond to harassment in field science (Kelly & Yarincik, 2022). Participants included scientists across field and ocean science disciplines, leadership from relevant academic institutions, and social scientists with expertise in the causes and impacts of sexual harassment. The workshop identified 52 practices to address harassment in the field. These recommendations fell into four broad categories: culture change, accountability, policy development, and reporting. Workshop organizers also categorized each recommendation in terms of resources required, including timeframe and difficulty.

All of these require institutional commitment to a greater or lesser degree. These recommendations do not rely on good intentions of individuals, but instead are driven by institutional structural changes for preventing and responding to harassment in field sciences.

Target audiences include university leadership, field practitioners and leaders, funding agencies (both private and public), government agencies, professional societies, and community organizations, though not all recommendations will be relevant for all audiences. Findings targeted four major topics: 1) field climate and culture change, 2) accountability, 3) policy development, and 4) reporting.

1. Field climate and culture change. A study recently released by the National Academies concluded that a hostile work environment is the single most important factor in determining whether sexual harassment is likely to occur. The workshop developed recommendations to improve both field climate and culture. Major themes in the recommendations include:

1. A harassment-free, respectful environment must be as institutionalized and codified into practice as much as any other practice, like field data protocols and safety checklists. Behavioral expectations must be defined, shared, and normalized.
2. Just as scholarly and work performance feedback is given and received, feedback on collegial behavior must be shared. Poor behavioral performance must be acted on.
3. Respectful behavior and DEIJ efforts must be formally considered in hiring, evaluations, promotions, and tenure.
4. As with other safety assessments, conduct evaluations and risk assessments around harassment and assault. Employ outside expertise for guidance, and foster continual improvement in policies and behavior.

2. Accountability. Our workshop participants identified a need for greater accountability, especially at the institutional leadership level, to support positive field climate and ultimately drive behavioral and cultural change in field science communities. Environments perceived as more permissive of sexual harassment can lead to greater occurrences of harassment, and a reluctance by targets to report.

Recommendation highlights include:

1. Holding PIs and other leaders accountable for safe and equitable work environments.
2. Develop protocols for safe and equitable practices in the field, train fieldworkers, and hold them as accountable for these practices as you would for their data collection.

3. Create, publicize, and enforce consequences for perpetrators of harassment. Create metrics for, require, compensate, and reward DEIJ work.
4. Ensure targets of harassment are protected and harms to them are repaired.
5. Ensure that reports of harassment are carried through ALL relevant institutional jurisdictions.

3. Policy development. Policy development provides the structural support needed to set behavioral expectations, reporting, and consequences. Few policies exist around harassment and bullying, and in the field setting, far away from campuses and labs, harassment policies are unclear or don't apply. Policies must be created around the following areas:

1. There must be explicit standards for behavior in the field, policies for reporting and record-keeping of harassment incidents, and defined consequences for harassing behavior.
2. Safety nets must be created for targets of harassment. They need safety in the field, multiple reporting avenues, and support following incidents. Their well-being must be centered in any process, and there needs institutional support for targets to stay in their research after being harassed.
3. Employ experts to advise and consult on best practices. Don't go it alone.
4. Policies must be communicated to teams, and enforced.

4. Reporting. Incident reporting is a critical piece of harassment prevention and response. Reporting in remote research situations is especially challenging due to lack of communications and support resources. Reporting mechanisms for targets of harassment in academia are byzantine, ineffective, or nonexistent. Reporting may be complicated because the research station or vessel may be owned and operated by a different institution from the victim's and the perpetrator's, with different policies and practices.

Major themes in the recommendations include:

- Having multiple mechanisms for communication, like accessible radios, InReach devices, wifi access, or others that are available to use in private by any person at any time.
- Having multiple avenues for reporting, including diverse trained individuals on site and different off-site resources at the ready. Have multiple avenues for each relevant institution.
- Developing reporting tools for minor transgressions, including record keeping. Include regular check-ins and surveys of field staff.

Best practices don't rely on training to change people's attitudes and imploring them to "do better". Developing institutional structures and incentives to make it possible to do the right thing, to reward doing the right thing, to support people who are harmed, and to give consequences to those who do harm. Bring in experts, invest the resources, including time, in creating and supporting these institutional structures. Don't wait for behavior to become illegal before it's addressed – interrupt the process before it gets that far, because it's damaging at all levels of severity. Because our culture of harassment is as pervasive as the air we breathe, it can be hard to name, and harder still to imagine something different. However, just because we are accustomed to it, doesn't mean that it isn't causing urgent harm or that we can't make urgent improvements. I urge this committee to drive these changes to our institutions so that our research community can thrive and rise to the many challenges facing our society and our planet.

Clancy, K. B., Nelson, R. G., Rutherford, J. N., & Hinde, K. (2014). Survey of academic field experiences (SAFE): Trainees report harassment and assault. *PloS one*, 9(7), e102172.

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